THE OIL WEEKLY

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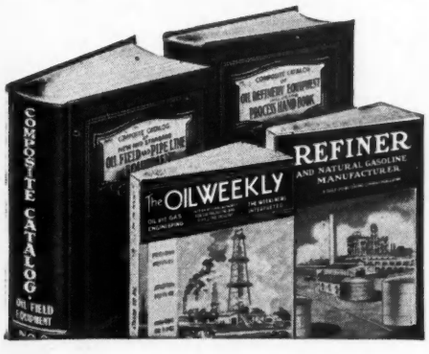

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The Oil Man's Calendar

NOV. 3-4	**American Association of Petroleum Geologists, Pacific Section, Los Angeles, California.**
3	**Mid-Continent Oil & Gas Association, Oklahoma-Kansas Division, Tulsa, Oklahoma.**
14-18	**American Petroleum Institute, (Annual), Stevens Hotel, Chicago.**
DEC. 5-9	**American Society of Mechanical Engineers, (Annual), New York.**
	Mid-Continent Oil & Gas Assn., Standing Tax Committees, Dallas, Texas.
7	**Oil & Gas Association of Michigan, Mt. Pleasant, Michigan.**
10	**West-Central Texas Oil & Gas Association, Abilene, Texas.**
APR. 24-29	**Oil-World Exposition, Houston, Texas.**

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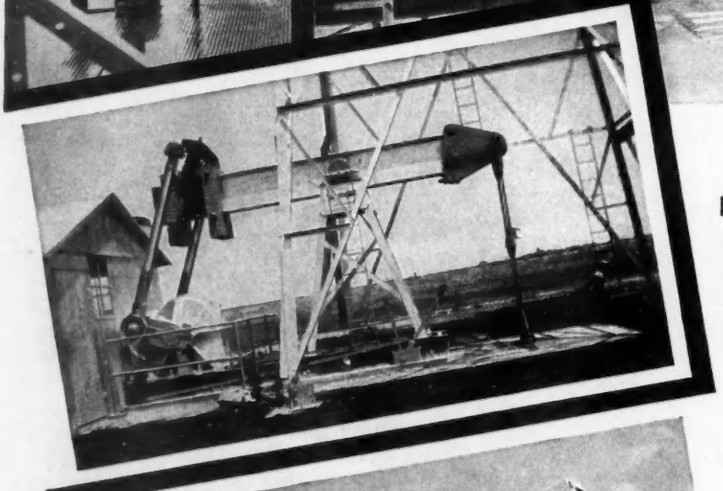

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This Week's Panorama

THE oil industry's outlook appears distinctly hopeful, in the light of recent favorable developments and statistics; and it seems possible that part or all the recent losses in crude and refined oil prices may be recovered by next spring. However, such improvement of the markets obviously could be achieved only through the maintenance of strict control over crude production and refinery runs in the meantime.

New Allowables Strict

Especially encouraging is the assurance that crude oil production will be kept under strict control during November, despite the recent threats that allowables might be loosened.

This assurance was given at the middle of last week when the Texas Railroad Commission issued its November order, continuing both Sunday and Saturday shutdowns of all Texas fields. Under the new order, Texas actually will average approximately 100,000 barrels a day less production than the Bureau of Mines estimate of current market demand.

In connection with the new order, Chairman Ernest O. Thompson of the railroad commission exhorted refiners to promptly reduce crude runs to stills 15 percent, so as to permit withdrawals of surplus gasoline and fuel oil from storage. His plea was expected, moreover, to be heeded. For some refiners undoubtedly are opposed to the widely publicized suggestion that government regulation of refinery runs be inaugurated, and would prefer to achieve the desired results voluntarily.

Louisiana officials last week announced that the daily allowable of that state would be reduced 25,000 barrels on November 1.

Oklahoma will retain in November its October allowable of 428,000 barrels daily, although the Bureau of Mines estimated the November market demand at 515,000 barrels daily.

The other leading producing states also contemplate continuing strict allowables in November.

Thus there is indicated for November a program of strict crude production allowables and similarly moderate refinery operations.

Under such conditions, the industry's markets almost certainly will be strong in the next several weeks.

Latest Statistics Favorable

The latest weekly statistics of the industry were very favorable. They indicated that both crude oil production and refinery runs were being held down at economic levels, and that the industry was, moreover, taking more crude and gasoline out of storage, thereby improving the inventory situation.

United States crude oil production in the week ended October 22 averaged 3,247,400 barrels daily, having decreased about 25,000 barrels from the previous week's level. At the new rate, the production was about 120,000 barrels under current market requirements. It was 10.1 percent lower than in the corresponding week last year.

Crude oil runs to refinery stills also were reduced materially in the week ended October 22, having dropped 80,000 barrels to a daily average of 3,230,000 barrels. They then were 4.5 percent lower than in the corresponding week last year.

With the refinery operations curtailed, it was possible for the industry to take over 700,000 barrels of gasoline out of storage in the week of October 22, the stocks of that product having been lowered to 67,695,000 barrels. The gasoline supply then was only 1.7 percent larger than a year previously, when it amounted to 66,554,000 barrels.

Additions to fuel oil stocks meanwhile were slowed down, having amounted to only about 150,000 barrels during the week, as the quantity in storage reached a new peak of 152,796,000 barrels. That amount was 27.9 percent larger than the supply on hand a year before.

The crude oil storage situation meanwhile has continued favorable, further withdrawals having been made. In the week ended October 15 the nation's crude stocks were reduced over 2,000,000 barrels more, having been brought down to a new 16-year low of 277,001,000 barrels. At that level they were 10 percent lower than at the corresponding time last year.

Oil Demand Good

The latest monthly forecast of demand for petroleum by the Bureau of Mines, anticipating November requirements, was moderately encouraging. It indicated the expectation that gasoline demand would be better than in November last year.

Domestic demand for motor fuel is expected to be practically the same in November, 1938, as in November, 1937. But exports are expected to be 14.8 percent larger. Consequently, total gasoline demand for November is expected to be 1.1 percent larger this year than last year.

Actual current demand for crude oil in November will be held down by certain unusual circumstances, it is indicated. The Bureau of Mines estimated that the market requirements for domestic crude in November, 1938, would be 5.5 percent less than the demand in November, 1937. It explained, however, that the decline from a year ago was due chiefly to the fact no provision was made for an increase in

A new pipe line placed in service last week was Michigan-Toledo Pipe Line Company's 30-mile 8-inch carrier from Mt. Pleasant to the new Freeman-Clare field of Michigan. At Mt. Pleasant the line ties in with the company's main line terminating at Toledo, Ohio. The pipe line, shown here during construction stage, was built by Berea Construction Company, under the field supervision of Jap Mennis. The concern is expected to handle 9000 barrels daily during November.

gasoline stocks during November, 1938, in contrast to an actual increase of 2,587,000 barrels in November, 1937. Fuel oil stocks will be sufficient to supply early winter needs without requiring heavy runs of crude oil and consequent excessive production of gasoline, it was added.

The trends of oil consumption lately have improved. The demand several months ago was running lower than in the corresponding months last year. But in August it showed definite improvement, having risen above last year's levels.

The total demand for United States oil in August, 1938, was 3/10 of 1 percent larger than in August, 1937, whereas it had been down 5.5 percent in July and 2.7 percent in June and May.

The domestic demand for gasoline was 1.7 percent larger in August, 1938, than in August, 1937,

Bureau of Mines Forecasts Reflect Trends of Demand

(Thousands of Barrels of 42 U. S. Gallons)

MONTH	Total Demand for Domestic Crude	MOTOR FUEL DEMAND		
		Domestic	Export	Total
July:				
July, 1938, forecast	105,340	49,930	4,000	53,930
July, 1937, actual	111,387	50,704	2,962	53,666
Change from year ago	—5.4%	—1.3%	+35.0%	—0.5%
August:				
August, 1938, forecast	106,580	50,000	4,500	54,500
August, 1937, actual	113,148	49,597	3,771	53,368
Change from year ago	—5.8%	+0.8%	+19.3%	+2.1%
September:				
September, 1938, forecast	103,330	47,000	4,400	51,400
September, 1937, actual	110,962	47,245	4,456	51,701
Change from year ago	—6.9%	—0.5%	—1.2%	—0.6%
October:				
October, 1938, forecast	104,370	45,800	4,400	50,200
October, 1937, actual	111,984	45,361	3,830	49,191
Change from year ago	—6.8%	+1%	+14.9%	+2.0%
November:				
November, 1938, forecast	101,740	42,700	3,800	46,500
November, 1937, actual	107,264	42,666	3,309	45,975
Change from year ago	—5.5%	—0.1%	+14.8%	+1.1%

and other similar increases included those of 17 percent for kerosene, 7.5 percent for gas oil and distillates, 4 percent for lubricants, and 15 percent for asphalt.

Markets Generally Steady

The oil industry's markets have become generally steady at the lower levels to which they recently were pulled down.

Crude price adjustments apparently have been largely completed east of California, and refined product prices now are more settled, although last week brought some additional downward revisions of the top quotations on gasoline, as Mid-Continent refiners became more generally resigned to a lower range of prices.

Anxiety in California

Following the general decline of crude and refined oil prices recently in all other sections of the United States, the oil industry of California naturally has been uneasy, in the fear that similar developments might occur in that state.

The situation in California is, however, fairly satisfactory, and it is generally believed that the markets there can be maintained at least for some time. At the same time, it is conceded that the markets may become unsettled later in the year, when the fall and winter period of curtailed demand arrives, unless adequate control over crude oil production is maintained.

So far, the effect of the Mid-Continent price reductions on the California oil industry has been largely psychological. California would not be materially affected by Mid-Continent prices unless they were so low as to permit shipping gasoline through the Panama Canal to the West Coast in competition with California gasoline. Because of tanker charges and canal tolls, such westward shipments would not be profitable unless the gasoline prices on the Gulf Coast were very badly depressed.

Wages and Hours

Industry is paying more than the minimum wage but hour limit of federal act raises question

WHETHER or not an independent operator who has no pipe line or refinery affiliations but who sells his oil at the well head comes under the provisions of the Federal Wage and Hour Law is a question that is being considered with a great deal of interest by oil producers and their legal representatives.

While such companies are paying more than the minimum scale prescribed by the Wage and Hour Act, certain other provisions of the act have caused operators to object to it. For instance, there is the question of overtime and the possibility that overtime might be required on certain jobs on which overtime has not been paid previously.

Then there is also the question of maintenance of certain records which, to use the expression of an independent operator, puts the operators in the position of keeping books for the government on matters which have not previously required such bookkeeping.

A court decision probably will be necessary to determine whether or not an independent operator under the conditions described in the first paragraph comes under the provisions of the Wage and Hour Act. Some attorneys hold that drilling contractors do not come under the act because they are not producing oil.

On the other hand, in connection with the independent operator the point has been raised that under the language of the act, he may be liable because he is producing a product which he knows is going into interstate commerce.

Prior to the Wage and Hour Act becoming effective a labor relations board had claimed in at least one controversy with a South Texas operator that this operator was engaged in interstate commerce even though his product was sold at the well head. Some attorneys think that inasmuch as the Wage and Hour bill is much broader in scope than the labor relations act, that the government will maintain that independent opeartors do come within the provisions of the act. The act specifically provides that any individual or company or organization which is manufacturing or producing something which goes into interstate commerce is included under the provisions of the act and mining is specifically included.

Exemptions

While the act exempts a number of individuals by specific mention most of such exemptions are already taken care of under other federal regulations such as the regulatory provisions covering seamen, carriers engaged in interstate commerce, etc. Among the specific exemptions which would affect the oil industry would be bona fide executives or administrators, professional employees engaged in scientific research and, affecting manufacturers of equipment is one for outside salesmen.

That section of the act relating to hours provides that overtime pay which shall amount to time and a half of the regular pay shall begin after the employee has worked 44 hours within a week. The provisions of the act relating to wages provides that during the first year of the operation of the act which becomes effective October 24, 1938, the minimum wage scale shall be 25 cents per hour. This is graduated, rising to 30 cents hourly on October 24, 1939, and in 1945 the minimum wage scale will be 40 cents per hour.

WHILE a number of attorneys contend that an independent producer, without pipe line or refinery facilities, is exempt on the ground that even though the Wage and Hour Act may say he is engaged in interstate commerce, actually he is not. From some of the words contained in the act it has appeared that the federal government might take the position that such an operator does come under its provisions.

Consequently, The OIL WEEKLY queried officials in Washington on this important phase, and was told that no individual definitions of the status of employers are yet being issued by the wage-hour administration, but unofficially we were informed that any producer selling oil at the well was not likely to be considered as being engaged in interstate commerce and therefore would not come under the law.

It will be some time before interpretations are issued on individual trades.

The act itself contains approximately 14,000 words. A great many people who have studied it and who have discussed it find themselves lost in a morass of words with barbed wire entanglements in the nature of administrative policies and rules yet to be announced. The matter of records is an instance at point. The act itself provides in effect that employers coming under the act shall make such reports and keep such records as the administrator may deem advisable. While a great deal has been written about the records which will be necessary, there seems to be considerable uncertainty as to official rules on records at this time but the act very clearly says that records shall be kept in such manner as to give the administrator almost any information on matter required at any time he may require it. A number of associations are studying the act but as yet

most of the resumes issued by associations are not very conclusive in their discussions.

Some attorneys have expressed the opinion that there will be continued uncertainty on the act until the courts have finely defined some matters which are at the present time ambiguous.

The act also makes provisions which would permit various groups of employers in related business to get together for the purpose of clarifying rules for that particular type of work and under the act as it is understood deputy administrators could be appointed whose duty it would be to work with such groups.

The administrator of the act has been traveling throughout the United States holding meetings and answering questions. However, it has been reported that in some instances the questions which were answered in certain localities have received entirely different answers since the administrators went back to Washington. Unquestionably, out of the act will come hearings from various groups—as a matter of fact some such hearings have already been established and it is very probable that various groups of allied interests which are affected by the act will hold meetings and solicit hearings before the administrator in Washington.

Under date of October 22, the National Association of Manufacturers, through Walter B. Wisenburger, executive vice president, issued a bulletin to its members which release contained an interpretation of Bulletin No. 4 issued by Elmer F. Andrews, Wage Law Administrator, and discussions of other important features of the act relating to records and overtime. While there are some portions of the Bulletin that would not apply to the oil industry, in the main a great deal of it will be found of interest. The Bulletin in part follows:

TITLE 29—LABOR
CHAPTER V—WAGE AND HOUR DIVISION

PART 516—REGULATIONS ON RECORDS TO BE KEPT BY EMPLOYERS PURSUANT TO SECTION 11(c) OF THE FAIR LABOR STANDARDS ACT.*

SECTION 516.1 RECORDS REQUIRED—Every employer subject to any provisions of the Fair Labor Standards Act or any order issued under this Act shall make and preserve records containing the following information with respect to each person employed by him, with the exception of those specified in Sections 13(a)(3), 13(a)(4), 13(a)(5), 13(a)(6), 13(a)(8), 13(a)(9), and 13(a)(10) of the Act.

(a) Name in full
(b) Home address
(c) Date of birth if under 19
(d) Hours worked each workday and workweek
(e) Regular rate of pay and basis upon which wages are paid[1]
(f) Wages at regular rate of pay for each workweek, excluding extra compensation attributable to the excess of the overtime rate over the regular rate[1]
(g) Extra wages for each workweek attributable to the excess of the overtime rate over the regular rate[1]
(h) Additions to cash wages at cost, or deductions from stipulated wages in the amount deducted or at the cost of the item for which deduction is made, whichever is less[2]
(i) Total wages paid for each workweek
(j) Date of payment

PROVIDED, however, that with respect to employes specified in Section 13(b) of the Act, records referred to in paragraphs (f) and (g) of this Section shall not be required, and

PROVIDED, further that with respect to employes who are specified in Section 13(a)(2) of the Act and employes who are defined in regulations of the Wage and Hour Division—Part 541 (Regulations defining and delimiting the terms "any employe employed in a bona fide executive, administrative, professional, or local retailing capacity, or in the capacity of outside salesman" pursuant to Section 13(a)(1) of the Fair Labor Standards Act)—employers need make and preserve records containing the following information only:

(a) Name in full
(b) Home address
(c) Occupations

Section 516.2 Form of Records

No particular order or form is prescribed for these records, provided that the information required in Section 516.1 is easily obtainable for inspection purposes.

* Sections 516.1 through 516.5 issued under the authority contained in Section 11(c), 52 Stat. 1060.

[1] These three items of information are only required when overtime is worked by the employe.

[2] This information is required only where the cash wage actually paid is less than the minimum wage required by the Act. The reasonable cost of board, lodging, and other facilities as part of wages, is defined and delimited by regulations of the Wage and Hour Division—Part 531—(Regulations determining the reasonable cost of board, lodging, and other facilities pursuant to Section 3(m) of the Fair Labor Standards Act). This matter is dealt with further in Interpretative Bulletin No. 3 of the Wage and Hour Division.

Sample Payroll Form

Workweek ending_____ **Date of Payment (j)**_____

NAME	HOURS OF WORK								REGULAR RATE OF PAY	WAGES					
										EARNINGS			DEDUCTIONS		
	S	M	T	W	T	F	S	Total Hrs.		At. Reg. Rate of Pay for Total Hours Worked	Extra for Overtime	Total	Social Security Taxes	Other (Itemized)	Total Cash Wages Paid
(a)								(d)	(e)	(f)	(g)		(h)	(h)	(i)
1. George Henry Harper	...	8	8	8	8	8	8	48	60¢ per hr.	$28.80	$1.20	$30.00	$0.30	....	$29.70
2. Alfred Olson	...	8	8	8	8	8	8	48	25¢ per hr. ($2.00 per 8-hr. day)	12.00	.50	12.50	.13	....	12.37
3. John White	...	8	8	8	8	8	8	48	50¢ per hr. ($20.00 per wk. of 40 hrs.)	24.00	1.00	25.00	.25	....	24.75
4. Martha Wilson	...	8	8	8	8	8	5	45	50¢ per hr. ($22.00 per wk. of 44 hrs.)	22.50	.25	22.75	.23	....	22.52
5. Henry Hawkins	...	8	8	8	8	8	6	46	52¢ per hr. ($100.00 per mo. on a wk. of 44 hrs.)	23.92	.52	24.44	.24	....	24.20
6. Mary Miller	...	8	8	8	8	8	8	48	25¢ per hr. (P.W.)	12.00	.50	12.50	.13	....	12.37
7. Helen Marks	...	8	8	8	8	8	...	40	(P.W.)	15.00	....	15.00	.15	....	14.85
8. Janet Barber	...	8	8	8	8	8	8	48	41¢ per hr. (P.W. plus bonus)	19.68	.82	20.50	.21	....	20.29
9. William J. Anderson	...	8	8	8	8	8	8	48	42¢ per hr. (40¢ per hr. & P.W.)	20.16	.84	21.00	.21	....	20.79

This sample form has been prepared for the purpose of explaining and illustrating the requirements of Section 516.1 of the Regulations. Employers are not required to keep their records in this form, or in any other particular form, provided that the information required can be easily obtained from their records.

Section 516.3 Place and Period for Keeping Records

Each employer shall keep the records required by these regulations for his employes within each state either at the place or places of employment or, where that is impracticable, in or about at least one of his places of business within such state, unless otherwise authorized by the administrator. Such records shall be kept safe and readily accessible for a period of at least four years after the entry of the record, and such records shall be open to inspection and transcription by the administrator or his duly authorized and designated representative at any time.

Section 516.4 Definitions of Terms Used in These Regulations

(a) *Act*—The "Act" means the Fair Labor Standards Act of 1938.

(b) *Hours Worked*—For the purpose of these regulations the term "hours worked" shall include all time during which an employe is required by his employer to be on duty or to be on the employer's premises or to be at a prescribed workplace.

(c) *Workday and Workweek*—For the purposes of these regulations, a "workday" with respect to any employe shall be any 24 consecutive hours, and a "workweek" with respect to any employe shall be 7 consecutive days, provided that the workday or workweek is not changed for the purpose of evasion of provisions of the Act or any regulations prescribed pursuant thereto.

(d) *Wage or Wages*—For the purposes of these regulations, the term "wage" or "wages" means all remuneration for employment of whatsoever nature whether paid on timework, piecework, salary, commission, bonus, or other basis.

(e) *Employe*—The term "employe" is defined by the Act (Sec. 3(e) to include "any individual employed by an employer," and the term "employ" is defined by the Act (Sec. 3(g) to include "to suffer or permit to work."

It shall be the duty of each employer to make and preserve all records required under these regulations with respect to each employe employed by him, whether or not such employes perform their work in an establishment or plant operated by the employer or subject to his immediate supervision. Thus, the required records shall be made and preserved by the employer for "industrial homeworkers" or other employes who produce goods for the employer from material furnished by him or who are compensated for such employment at piece rates, wherever such employes actually perform their work.

(f) Regular rate of pay—For the purpose of these regulations, the term "regular rate of pay" means.

(i) with respect to an employe paid solely on an hourly basis (i.e., receiving no additional wage whatever) : the hourly wage rate at which he is employed.

(ii) with respect to an employe employed on a daily, weekly, semi-monthly[3] or monthly[3] basis for a regular number of hours per week determined by agreement or custom—the average hourly rate[4] obtained by dividing the wages[3] earned for that regular number of hours in the workweek by that regular number of hours; and

(iii) with respect to an employe paid on any other basis than those specified in (i) and (ii) of this Paragraph (f) :—the average hourly rate[4] obtained by di-

[3] With respect to an employe paid on a monthly basis, the wages earned during a workweek are computed by multiplying the monthly wage by 12 and dividing the result by 52. With respect to an employe paid on a semi-monthly basis, the wages earned during a workweek are computed by multiplying the semi-monthly wage by 24 and dividing the result by 52.

[4] In computing the average hourly rate fractions of less than one-half cent may be disregarded, and fractions over one-half cent should be raised to the next full cent.

Digest of Principal Provisions of Wage and Hour Act

Primarily, the law is designed to fix a ceiling of 40 hours as the standard work week, and a floor of 40 cents an hour for wages, and to abolish all child labor.

At the moment, or as of October 24, 1938, it sets a minimum hourly wage rate of 25 cents for persons employed in interstate commerce and the production of goods for interstate commerce; and a maximum standard work week of 44 hours with regular pay, and overtime rates of time and one half the usual rates.

Hour Provisions

The act decrees that the standard work week in interstate industries, with some exceptions, shall be reduced to 40 hours after October 24, 1940, under the following schedule:

(1) From October 24, 1938 to October 24, 1939—44 hours.
(2) From October 24, 1939 to October 24, 1940—42 hours.
(3) Thereafter 40 hours.

The law does not forbid employment in excess of the standard work week hours provided the employee is compensated for such excess at a rate not less than one and a half times the regular rate at which he is employed. That is, a worker receiving 25 cents an hour would get 37½ cents an hour for all hours worked over the standard during any consecutive 7 days.

Wage Provisions

Two methods of attaining the goal of a 40 cents an hour floor under wages are provided. The first, like the hour provisions, is automatic. Under it, wages cannot be less than:

(1) From October 24, 1938, to October 24, 1939—25 cents an hour;
(2) From October 24, 1939 to October 24, 1945 (6 years) —30 cents an hour;
(3) Thereafter, 40 cents an hour, unless it be shown by a preponderance of evidence that such rate would substantially curtail employment in the given industry.

However, believing that it will be possible before 1945 to fix minimum wages in certain industries above 25 or 30 cents without substantially curtailing employment, Congress provided for wage determination by industry committees representing in equal numbers the employers and employees in a particular industry and the public.

The industry committees are to be appointed by the administrator of the act and are given the information he has on the wage problem in their industries, as well as legal and clerical help. A committee may summon witnesses and perform other functions necessary for its work. A wage order is made by the administrator only on the recommendation of a committee, which is directed to propose "the highest minimum wage rates for the industry which it determines, having due regard to economic and competitive conditions." The committee will file its recommendations with the administrator, who will then hold a hearing at which interested persons will have an opportunity to be heard. The administrator may not make a wage order which substantially departs from the recommendation of the industry committee, but following the hearing, he may refer the matter back to the same committee or to a new committee. During the first year, under this method, a minimum wage between 25 and 40 cents an hour can be set, and during the next 6 years, between 30 and 40 cents an hour.

Industries Covered

Without attempting to describe all the classes of employees who are covered, it can be said that the wage and hour provisions of the act in a general way apply to the following:

(1) Employees engaged in producing, manufacturing, mining, handling, transporting or in any manner working on goods moving in interstate commerce;
(2) Employees engaged in any process or occupation necessary to the production of such goods;
(3) Employees engaged in interstate transportation, transmission or communication.

General Exemptions

So far as the oil industry at large is concerned the exemptions from both wage and hour provisions that are provided that will be applicable are:

(1) Persons employed in a bona fide executive, administrative, professional or local retailing capacity, or as outside salesmen;
(2) Persons employed in any retail or service establishment, the greater part of whose selling or servicing is in intrastate commerce;
(3) Persons engaged as seamen.

viding the wages[6] earned for the particular workweek by the total number of hours worked during that workweek.

Section 516.5 Petition for Amendment of Regulations

Any person wishing a revision of any of the terms of the foregoing regulations on records to be kept by employers—Section 516.1 through 516.4—may submit in writing to the Administrator a petition setting forth the changes desired and the reasons for proposing them. If, upon inspection of the petition, the Administrator believes that reasonable cause for amendment of the regulations is set forth, the Administrator will either schedule a hearing with due notice to interested parties, or will make other provisions for affording interested parties an opportunity to present their views, both in support and in opposition to the proposed changes.

EXPLANATION OF THE RECORDS REGULATIONS (Title 20, Chapter V, Part 516, Sections 516.1 through 516.5)

Purpose of the Regulations

It is the purpose of Regulations—Part 516—to assist employers in complying with the Act and to assist the Administrator and his designated representatives in securing uniform enforcement of the Act. Every effort has been made to coordinate the record-keeping requirements under this law with those under the Federal Social Security Act, the state unemployment compensation laws and other statutes and thus reduce to a minimum the information required.

Paragraphs (e), (f) and (g) are explanations of information required in Section 516.1 of the Regulations when overtime is worked (over 44 hours per workweek in the year ending October 23, 1939, over 42 hours in the year ending October 23, 1940, and over 40 hours thereafter). When no overtime is worked, this information is not needed.

Form of Records

The sample payroll form herewith is submitted merely for explanatory purposes. Required records need not be made or preserved in any particular form so long as they are readily available and contain information from which the information required by Section 516.1 of the Regulations can be easily obtained. The sample form does not provide for recording such information as the worker's home address or date of birth of those under 19. This information will probably be recorded on a separate and permanent record form.

It would be advisable for the employer, as a means of protection, to maintain, in addition to the payroll record, such basic records as those which are recorded by time clocks or time cards, or sheets which include the exact time of starting and stopping the workday and of the time of starting and stopping the meal period.

Explanation of the Items of Information Required in Section 516.1 of the Regulations

Paragraph (a)—Name in full:

It is important to have the full name of the worker as a means of personal identification. The name of a worker should therefore be entered as Ruth Ware, not R. Ware; Henry George Rogers, not H. Rogers. Middle names should be recorded. Nicknames should not be used.

Paragraph (b)—Home address:

Home addresses should be secured from employes and recorded, and a reasonable effort should be made to keep them up to date.

Paragraph (c)—Date of birth if under 19:

The date of birth should be recorded if it appears that the employe is under 19 years of age. Where persons under 19 are employed, an employer should write "minor" or its abbreviation on the payroll before the name of each such person employed.

The Fair Labor Standards Act contains certain prohibitions on child labor, and employers are referred to Sections 3(e), 12 and 13(c) of the Act and to the regulations of the Children's Bureau of the U. S. Department of Labor for further information on this matter. Protection against violation of the Act by employing a person under 18 can be secured by holding a certificate issued under regulations of the Chief of the Children's Bureau of the U. S. Department of Labor.

Paragraph (d)—Hours Worked each workday and each workweek:

A record of time worked each week must be kept for each employe subject to the Act whether such employe is paid on a time work, piece work, commission, salary, or other basis.

While it is not required that the payroll form show the hours worked each day such a record would have great value in expediting inspection. Where not carried on the payroll the record of hours worked each day must be kept in such form as would permit of immediate use by the inspector should question be raised as to the accuracy of the payroll record on total hours during any one week.

A record must be kept of all time during which employes are required to be on duty or to remain on the premises, or to be at a prescribed workplace with the exception of regular meal periods.

The proper method of computing overtime is described in this explanation under Paragraph (g) below.

Paragraph (e)—Regular rate of pay and basis upon which wages are paid:

Where no overtime is worked, no entry need be made for this item.

Where overtime is worked (i.e., where the figure entered in Column (d) prior to October 24, 1939, is more than 44),[6] there should be entered in Column (e) sufficient information to determine the regular rate of pay by which overtime is calculated. The proper entry in this column depends on the basis on which an employe's wage is paid:

For an employe paid solely on an hourly basis, the proper entry is the hourly rate. Example (see line (1) of sample form): "60c per hour."

EXAMPLES: Worker (2) on the sample form is employed at $2 per day for an 8-hour day and works 6 full days in the workweek. His total weekly wage is $12.00 and his customary hours are 48. His average hourly rate is therefore 25c per hour ($12.00 divided by 48 = 25 cents). The proper entry in Column (e) is therefore: "25c per hour—($2 per 8-hour day)."

Worker (3) on the sample form is employed for $20 per week of 40 hours determined by custom in the establishment in which he is employed. His average hourly rate is therefore 50c per hour ($20.00 divided by 40 = 50 cents). The proper entry in Column (e) is therefore: "50c per hour—($20 per week of 40 hours)."

Worker (5) on the sample form is employed for $100 per month and by union agreement his regular hours per week are 44 hours. His weekly wage is calculated as $23.08 (12 multiplied by $100 divided by 52 = $23.08). The proper entry in Column (e), is therefore "52c per hour—($100 per month on a 44-hour week)."

For an employe paid on any basis other than those mentioned above in this explanation of Paragraph (e), the proper entry is the wage rate for the daily, weekly or monthly employe or the indication that the worker is a piece worker or is paid on some other basis, and in addition, the average hourly rate.

EXAMPLES: Pieceworker (8) on the sample form works 48 hours during the workweek and earns at piece rates, including a production bonus, a total of $19.68. Her average hourly rate is therefore 41c per hour ($19.68 divided by 48 = 41 cents). The proper entry here is therefore "41c per hour—(P.W. plus bonus)."

Paragraph (f)—Wages at regular rate of pay for each workweek excluding extra compensation attributable to the excess of the overtime rate over the regular rate.

Where no overtime is worked, no entry need be made for this item.

This Column (f) includes all wages[7] earned during a workweek for all hours worked but does not include extra earnings attributable to the excess of the overtime rate over the regular rate. For example (see line (1) on sample form), the proper entry in Column (f) for an employe paid 60c per hour for 48 hours work is $28.80 (60c times 48 equals

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[6] In computing the average hourly rate all wages earned or paid during a particular workweek must be included except

(a) bonuses not computed on the basis of measured work performed (e.g. bonuses for punctuality, simple Christmas bonuses, etc.)

(b) extra compensation attributable to the excess of the overtime rate over the regular rate, and

(c) additions to the cash wage for board, lodging or other facilities furnished by the employer.

[6] Except for 14 weeks in any calendar year in "seasonal industries" as determined in Regulations—Part 536—of the Wage and Hour Division, and where a collective bargaining agreement made by representatives of employes certified as bona fide by the National Labor Relations Board provides that no employe shall be employed more than 1000 hours during any 26 consecutive weeks or 2000 hours within a year, in which cases overtime is more than 12 hours per workday and over 56 hours per workweek (Section 7 (b) of the Act).

For an employe paid on a daily, weekly or monthly basis, who is employed for a regular number of hours per week determined by agreement or by the custom maintained in the establishment, the proper entry is the wage rate for the day, week or month, reduced, as shown in the following three examples, to the proper average hourly rate.

[7] Except those wages specified in Footnote 5 (Section 516.4) (f) of the records regulations:

"(a) bonuses not computed on the basis of measured work performed (e.g. bonuses for punctuality, simple Christmas bonuses, etc.).

"(c) additions to the cash wage for board, lodging or other facilities furnished by the employer."

$28.80). This entry includes wages for the 4 hours overtime at the regular rate of pay. Additional overtime compensation for these 4 hours of overtime is calculated separately and entered in Column (g).

The proper entry in Column (f) is computed differently depending upon the basis on which the employee is paid:

For a timeworker paid at an hourly wage rate only, this item is the regular rate of pay multiplied by the number of hours worked in the workweek.

For a timeworker paid at a weekly wage rate, this item is the weekly rate of pay plus a sum for all hours over 44 (computed by multiplying the number of hours worked in excess of 44 by the average hourly rate). (See line (4) on sample form.)

For a timeworker paid at a monthly wage rate, this item is computed as follows: The monthly wage is reduced to a weekly wage by multiplying 12 times the monthly rate and dividing the result by 52. This weekly wage plus a sum for overtime computed as in the preceding paragraph, constitutes this item (f). (See line (5) on sample form.)

For a pieceworker this item is the amount earned at regular piece rates, including any production bonus. (See line (8) on sample form.)

EXAMPLES: Timeworker (1) on the sample form is entered in Column (f) for "$28.80 (60c per hour times 48, the number of hours worked in the workweek).

Timeworker (4) on sample form paid at the regular rate of $22.00 per week, is customarily employed 44 hours per week. Her average hourly earnings are therefore 50 cents per hour ($22.00 divided by 44 equals 50 cents). Since she has worked one hour overtime, her wages at her regular rate of pay for 45 hours are entered in Column (f) as "$22.50" ($22.00 plus 50 cents equals $22.50).

Pieceworker (8) on the sample form is entered in Column (f) for "$19.68" (the amount paid for the number of pieces completed in the 48 hours of the workweek at the regular piece rates, plus a production bonus).

Paragraph (g)—Extra wages for each workweek attributable to the[8] Excess of the overtime over the regular rate.

Where no overtime is worked, no entry will appear for this item.

This item is the additional amount of earnings resulting from the extra rate of pay for overtime. This amount should equal at least one-half of the regular hourly rate of pay (or the average hourly rate) multiplied by the number of overtime hours.

EXAMPLES: Timeworker (1) on the sample form is entered for "$1.20" in Column (g) for this item (½ of the regular rate of pay multiplied by the overtime hours; ½ of 60 cents multiplied by 4 equals $1.20).

Pieceworker (8) on the sample form is entered for "$.82" in Column (g) for this item (½ of the average hourly rate multiplied by the overtime hours; ½ of 41 cents multiplied by 4 equals $.82).

Paragraph (h)—Additions to cash wages at cost, or deductions from stipulated wages in the amount deducted or at the cost of the item for which deduction is made, whichever is less.

This information is not needed if the cash wage is above the minimum required by the Act. If the cash wage is less than the minimum required by the Act, this entry should show the amount for each item, or the actual cost of each item, whichever is less; and in the case of additions, this entry should show the actual cost of the additions claimed.

Regulations—Part 531—of the Wage and Hour Division define and delimit the reasonable cost of board, lodging and other facilities as part of wages, as required by Section 3(m) of the Fair Labor Standards Act. Section 3(m) of the Act is further explained in Interpretative Bulletin No. 3 of the Wage and Hour Division.

[8] Interpretative Bulletin No. 4 of the Wage and Hour Division treats in further detail with the provisions for overtime compensation in Section 7 of the Fair Labor Standards Act.

WAGE AND HOUR DIVISION, DEPARTMENT OF LABOR OFFICE OF THE GENERAL COUNSEL INTERPRETATIVE BULLETIN No. 4

Maximum Hours and Overtime Compensation

Section 7 of the Fair Labor Standards Act deals with maximum hours and overtime compensation. Section 7(a) limits the number of hours that an employer may employ any of his employes who are engaged in commerce or in the production of goods for commerce to 44 hours in any workweek—this limitation becomes 42 hours on October 24, 1939, and 40 hours on October 24, 1940—unless the employe receives compensation at a rate "not less than one and one-half times the regular rate at which he is employed." It is clear that there is no absolute limitation upon the number of hours that any employe may work, but there is the requirement of time and a half for overtime, and hours worked in excess of 44 hours a week are to be considered overtime.

Even as to this requirement of overtime payments there are exceptions provided for in Sections 7 (b) and 7 (c). Thus Section 7 (b) provides that an employe may work up to 56 hours (12 in any work-day) without time and one-half overtime compensation (1) where a collective bargaining agreement made by representatives of employes certified by the National Labor Relations Board provides that no employe shall be employed more than 1000 hours during any 26 consecutive weeks or 2000 hours within a year and (2) for not more than 14 weeks in any calendar year, where an industry is found by the Administrator to be of a seasonal nature. It should be noted that the 1000 and 2000 hours exemption is limited to an agreement (a) setting either 1000 or 2000 hours as the absolute maximum that may be worked in the given period and (b) made by representatives of the employes duly certified by the National Labor Relations Board. It should also be noted that the word "seasonal" does not mean in industry operating throughout the year, even though there is a peak of activity at one or more times during the year, but only applies to an industry which because of natural conditions affecting the supply of the materials worked on operates only a limited part of the year (See Regulations of the Wage and Hour Division—Part 526). Section 7 (c) provides a complete exemption from the hour provisions for certain types of industries such as the first processing of milk and the ginning of cotton, and, for 14 workweeks, for the first processing of perishable fruits and vegetables and of agricultural or horticultural commodities (during seasonal operations and within the "area of production" as defined by Regulations of the Wage and Hour Division—Part 536).

The 44-hour limitation in Section 7 (a) is a limitation upon the number of hours that may be worked in any workweek free of time and one-half overtime compensation. The workweek is seven consecutive workdays, but may begin at any time of any day, save only that no change can be made for the purpose of evading the Act. There is no general limitation on the hours that may be worked in any one workday, or on a Sunday, or on a holiday. Any 44 hours within the workweek may be worked. But there may be no average over two or more weeks since the Act clearly takes as its standard a single workweek. Thus, where an employe works 34 hours one week and 54 hours the next, he will receive time and one-half overtime compensation for the 10 hours over 44 worked the second week. Time lost for any reason (such as holidays, sickness, vacations) during one workweek cannot be made up the next or any following workweek unless the employe receives time and one-half overtime compensation for hours in excess of 44 in the succeeding week.

Overtime must be compensated at a rate not less than one and one-half times the regular rate at which the employe is employed. The Act is clear that it is the employe's regular rate of pay on which time and half is based and not any minimum wage set in the Act. Time and half overtime compensation means one and one-half time the regular hourly rate of pay.

The regular hourly rate of pay which (except as to workers specially provided for in Section 14) cannot be less than the minimum hourly wage set by Section 6 or by a wage order of the Administrator pursuant to Section 8, is arrived at, in various cases, as follows:

(1) the piecework earnings (including production bonuses, if any) averaged over the hours worked, or

(2) the agreed hourly rate (average hourly rate where there are production bonuses) or

(3) the weekly wage (including production bonuses, if any) averaged over the regular number of hours per week determined by agreement or custom, or

(4) the weekly wage (including production bonuses, if any) averaged over the total hours worked where there is no regular number of hours.

A few examples may be helpful.

Where an employe is employed on a piecework basis, the regular hourly rate of pay is the total earnings per week (including production bonuses, if any) divided by the number of hours worked. Thus if the total earnings in any workweek of 48 hours are $24, the regular hourly rate of pay is 50 cents, the compensation for each of the last four hours is 75 cents and the total wage $25 ($44 \times 55 + 4 \times 75$). To put this

same example in the form suggested by the sample payroll form included in the Explanation of Records Regulations—Part 516: the earnings at the regular rate of pay for the hours worked are $24, the extra earnings attributable to the excess of the overtime rate over the regular rate are $1, and the total wage is $25 ($48 \times 50 + 4 \times 25$).

If the hourly rate is agreed upon the problem is identical. Thus a 50-cent hourly rate will bring, for an employe who works 48 hours, 75 cents the last four hours and a total wage of $25 ($44 \times 50 + 4 \times 75$ or $48 \times 50 + 4 \times 25$). A $4.80 bonus (for other than overtime) would increase the average hourly rate to 60 cents, the rate for each overtime hour to 90 cents, and the total wage to $30 ($44 \times 60 + 4 \times 90$ or $48 \times 60 + 4 \times 30$).

If the rate of pay is $22 for a 44-hour workweek (agreed or customary), the hourly rate is 50 cents and, where the employe works 48 hours, he will receive 75 cents for each of the last four hours or a total wage of $25 ($44 \times 50 + 4 \times 75$ or $48 \times 50 + 4 \times 25$).

If the wage is $20 for a 40-hour workweek (agreed or customary) and no compensation for overtime is either agreed upon or customary, the regular hourly rate of pay is 50 cents and, where the employe works 46 hours, the compensation is 75 cents for each hour over 44 and the total earnings $21.50 ($40 \times 50 + 2 \times 75$ or $42 \times 50 + 2 \times 25$). It will be noted that the Act does not require compensation for the hours between 40 and 44, since even on the basis of 44 hours the employe has received for that workweek compensation at an hourly rate in excess of the statutory minimum. However, if it is customary or agreed that overtime over 40 hours be compensated, as, for example, by straight time in the last example given, the hourly rate would be 50 cents and the total wage $23.50 ($44 \times 50 + 2 \times 75$ or $46 \times 50 + 2 \times 25$).

If the case last supposed is varied by assuming that time and a half for overtime is customary or agreed upon for all hours over the customary workweek of 40 hours, the hourly rate would still be 50 cents, for it would be unfair to say that the regular hourly rate included the time and a half, which would result in time and a half on time and a half. This would also be true of a piece rate or hourly rate where time and a half is given for overtime work.

A monthly wage is subject to translation into a weekly wage by multiplying by 12 (the number of months) and dividing by 52 (the number weeks). A semi-monthly wage is subject to translation by multiplying by 24 and dividing by 52. A $26 semi-monthly wage will equal a $12 weekly wage ($26 \times 24 \div 52$). From there on the problem is the same as with the weekly wage just discussed. On a daily wage, the problem becomes one of finding the weekly wage and the hours worked therefor. Thus a $3 daily wage for a regular 8-hour day in a regular 6-day week is simply an $18 wage for a regular 48-hour week.

Several questions may arise as to the interpretation of the regular rate of pay in light of the provision in Section 18: "No provision of this Act shall justify any employer in reducing a wage paid by him which is in excess of the applicable minimum wage under this Act." Several cases will be supposed:

1. An employer prior to October 24 pays his employes 50 cents an hour for the 48-hour week customarily worked by his employes. On October 24 the employer reduces the hours to 44, without altering the hourly rate. This is not a violation of the statute. Congress intended to make it economically disadvantageous for an employer to work his employes excessive hours. If an employer eliminates the excessive hours, he is under no statutory obligation to increase his total wage bill by increasing the hourly rate.
2. An employer works his employes 48 hours, at an hourly rate well in excess of the 25 cents minimum. On and after October 24, he intends to continue the 48-hour week, but announces a reduction in the hourly rate to such an amount (but still above the statutory minimum) which, figured at the lower rate for 44 hours and at time and one-half for the 4 excess hours, will maintain the employe's weekly earnings exactly as they were prior to the effective date of the statute. No attempt will be made at this time to give any definite interpretation of Section 18, as applied to such a case. It may be pointed out, however, (1) that it is not safe to assume that a section of an Act of Congress is meaningless and (2) the attempt of the employer, in negotiations with his employes in reference to this proposed reduction in the rate of pay, to "justify" the reduction in the hourly rate by reference to the overtime provisions of Section 7 as the excuse for resorting to this device, might be considered a violation of Section 18, and warrant a court in holding that the purported reduction in the hourly rate is not really a reduction in legal contemplation; and that consequently "the regular rate," which is the basis on which the time and one-half overtime compensation is calculated in Section 7 (a), remains the higher rate as it existed prior to the purported reduction.
3. An employer pays 50 cents an hour for a customary workweek of 44 hours. In anticipation of an expected rush of 2 or 3 weeks, during which the obligation to pay time and one-half overtime would accrue, he announced a reduction of the hourly rate, which he later restores after the rush has receded to the normal 44-hour week. Such a subterfuge would seem to be clearly unavailing; the *regular* rate of pay would be the customary rate of 50 cents an hour, rather than the purported reduced rate announced for the weeks of overtime employment in an obvious effort to circumvent the provisions of Section 7.
4. An employer pays 50 cents an hour for a customary workweek of 44 hours. He announces that he is reducing the hourly rate to 25 cents an hour, but he promises to pay each employe not less than the amount paid prior to October 24. This subterfuge would be equally unavailing; the *regular* rate of pay would be the customary rate of 50 cents an hour which the employer had guaranteed his employes, rather than the purported or reduced rate.

U. S. DEPARTMENT OF LABOR WAGE AND HOUR DIVISION

Washington

Interpretative Bulletin on Computation of Overtime Pay

Interpretative Bulletin No. 4 of the Wage and Hour Division of the U. S. Department of Labor explaining methods of computing overtime pay under the Fair Labor Standards Act and the effect of attempted reductions in the rate of pay was issued today (Friday) by Administrator Elmer F. Andrews.

The bulletin, prepared in the office of the Division's General Counsel, held that overtime work must be compensated at a rate not less than one and one-half times the regular rate at which an employe is employed. It supplemented regulations issued at the same time as to records which must be kept by employers.

The bulletin said, "The Act is clear that it is the employe's regular rate of pay on which time and a half is based, and not any minimum wage set in the Act. Time and a half overtime compensation means one and one-half times the regular hourly rate of pay."

In announcing this interpretation, Administrator Andrews explained that the intent of Congress was clearly to penalize overtime work and that any other interpretation would nullify the provisions of the law.

The discussion of reductions contained in the bulletin was made in connection with Section 18 of the law providing that "No provision of this Act shall justify any employer in reducing a wage paid by him which is in excess of the applicable minimum wage under this Act."

The bulletin stated that an employer reducing hourly rates in anticipation of a sudden rush of business would be responsible for overtime at the original higher rate because the change is an obvious subterfuge to avoid the intended effects of the maximum hour provisions.

It also stated that an employer purporting to reduce rates of pay but guaranteeing the same total wages as those paid before October 24, the effective date of the Act, must also pay overtime at the old rate.

The bulletin did not attempt to make a definite answer in the case of an employer reducing hourly rates for the future with the intent of working the same number of overtime hours as in the past at the same total wages as those paid before October 24. It pointed out, however, that it is not safe to assume that Section 18 is meaningless and that an employer who gets his employes to accept a reduction in rates on the strength of the maximum hour provisions might find that a court would hold the original higher rate the regular rate of pay.

The Act does not provide for an eight-hour day, the bulletin pointed out, but limits hours on a basis of a normal workweek with provision for time and one-half overtime compensation. Hours lost in one week cannot be made up in the next, whether lost because of holidays, sickness, vacations or insufficient business, without payment of the overtime rate for hours, in excess of forty-four worked in the succeeding week.

Repressuring

GIVES EXTENDED LIFE TO HAYNESVILLE FIELD

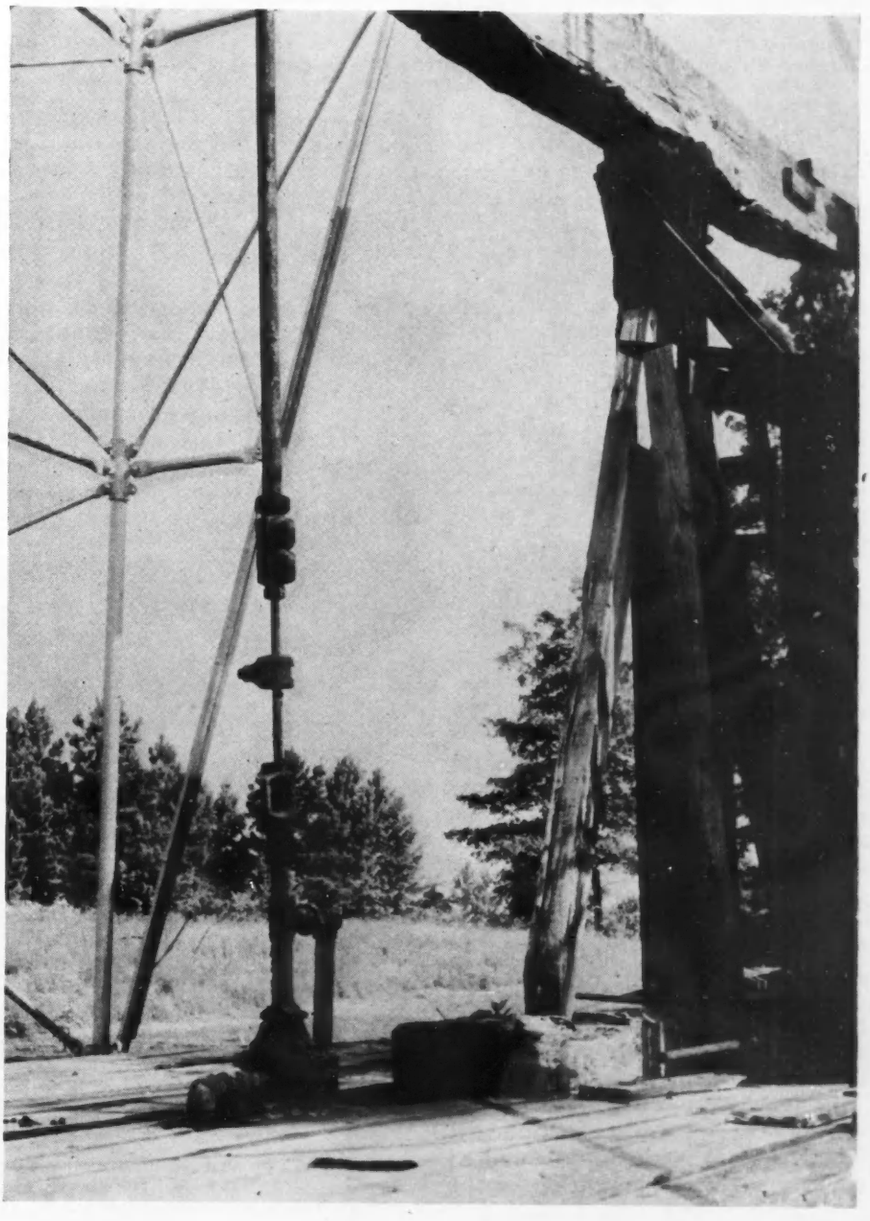
By JOHN C. ALBRIGHT

WHEN Smitherman et al drilled Taylor 2, Section 14-23n-8w, Claiborne Parish, Louisiana, to open a new field at Haynesville, obtaining oil at 2850 feet with the well making 3000 barrels daily, little thought, if any, was given to subsequent production practices other than flowing while the head was on and pumping the wells at a later date. Repressuring was not practiced in this or any other field to any extent 17 years ago, but with this method of secondary production, the Haynesville field has been given an extended production life, which promises to endure for several years to come.

This field includes a producing area of about 5200 acres on which 310 oil producers have been drilled. As of January 1, 1938, it had produced approximately 67,000,000 barrels of oil. The repressured area affects 279 of these wells, utilizing 32 input wells that have been converted for this purpose from regularly drilled original producers, without changing casing or tubing originally set in them. An average of 75,000,000 cubic feet of gas is required to operate this field monthly, with an average daily oil production of about 2300 barrels.

When drilling got under way in 1924, most of the area was uniformly spaced with one well to each 10 acres, with none of the haphazard methods employed in many flush fields opened up during these years. Casing was set above the Blossom sand, the principal producing formation, to exclude top water and to prevent migration of oil from this sand to others above. Due to these factors, when repressuring was instituted, very little workover jobs were to be done so gas could be placed where it would do the most work.

The field is a dome-shaped anticline, 6 miles long from east to west, and three miles wide from north to south. The oil when it was originally discovered had an A.P.I. gravity of from 34 to 34.5 degrees, with the casinghead gas produced carrying up to as much as 10 gallons of gasoline per 1000 cubic feet. Due to solution of gas which has been used to repressure the Blossom sand, the gravity of the oil has been raised to an average of 35 to 35.5 degrees A.P.I., while the gas-



Input well in Haynesville project equipped with tubing and rods for pumping fluid accumulation when well shows evidence of lowered intake.

Volume controller on input well at Haynesville which controls the amount of gas admitted to input well. Note by-pass arrangement controlled by diaphragm on main control valve.

oline content of the casinghead gas has dropped to an average of about 1.35 gallons per 1000 cubic feet. The drop in gasoline content is a natural occurrence, due to the fact that in the peak of production by natural methods, the field was placed under a high vacuum, which released much of the lower-boiling fractions of the oil. On the other hand, when pressure was applied to the sand, the oil took into solution much of the higher-boiling fractions of the gas, which perhaps is the reason for the increase in oil gravity.

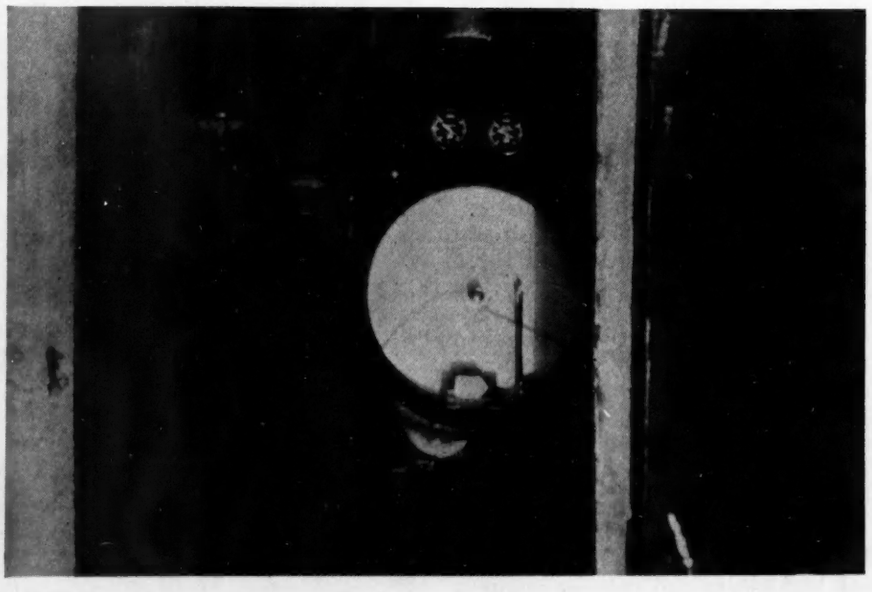
A production decline curve was projected for the field, which on January 1, 1926, was producing only 6132 barrels daily, showing evidences of rapid depletion. During the succeeding three years, production had fallen off to 4750 barrels daily, January 1, 1927; on January 1, 1928, only 3719 barrels was recovered, and on January 1, 1929, the field was producing 3126 barrels daily. When repressuring was contemplated during the fall of 1929, the field was declining at a rapid rate, even with vacuum to draw the oil from the sand to pumping wells. After methods had been worked out for injection of gas, the field was only making 2554 barrels of oil on January 1, 1930. This was a decline of 3578 barrels during the previous four years. This curve was then projected to cover what was thought to be the end of the field's economic life, placed at about January 1, 1934, with every indication wells would produce only about 2½ barrels each, which would not compensate for lifting.

Companies interested in the field at that time were The Ohio Oil Company, Arkansas Fuel Oil Company, Shell Petroleum Corporation, Reserve Oil Company and Magnolia Petroleum Company. The units taking part in repressuring were: The Ohio Oil Company-Gulf Oil Corporation, a joint company for operating each company's leases, and Arkansas Fuel Oil Company, Ohio Oil Company having acquired the holdings of Reserve Oil Company. The Ohio Oil Company was at the beginning of repressuring, operating a gasoline extraction plant in the field, which was pulling vacuum on the sand through various wells connected to the gathering system.

Two wells in Section 15 were taken off the beam in March, 1930, with residue gas from the gasoline plant used for injection. Vacuum was gradually reduced to equalize pressure from input to recovery, with an almost immediate increase several more wells were added to the injection system, keeping them well within the unitized area, until at this time 32 wells are used through which the repressuring gas introduced into the Blossom sand.

Oil production rose almost steadily throughout 1930, increasing month by month—with the usual serrated line of the graph to show a daily production of 3065 barrels daily from the 279 odd producers which were included in the active area. While the increase during the first year of repressuring was only about 490 barrels daily, production on that date was about 1015 barrels above the projected decline. Gas was purchased through commercial transportation lines to supplement the quantity available from the gasoline plant residue lines.

Peak production for the repressured area was reached on May 1, 1931, with the field averaging 3700 barrels per day on that date, which was about 1800 barrels per day in



Meter recorder and volume controller used in Haynesville repressuring project for measuring gas to input well.

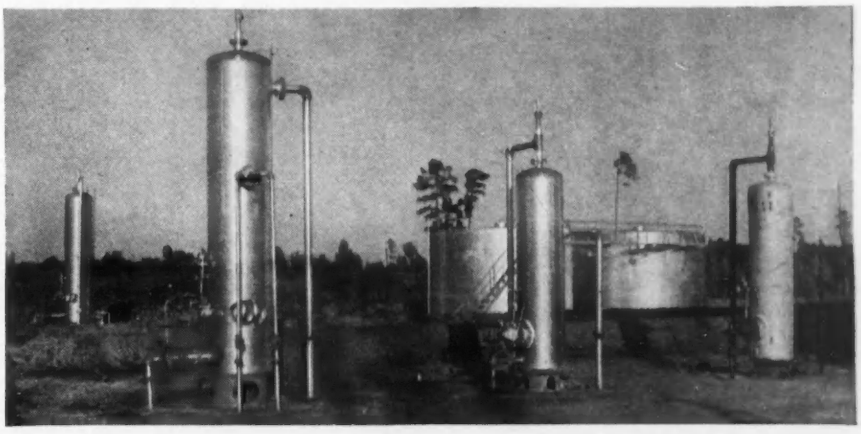
excess of that which would have been produced with vacuum and pumping without repressuring, according to the decline curve. Adverse economic disturbances during the summer of 1931 was a deciding factor in oil production, and due to the drop in prices for crude, activity of the field was curtailed, which is given as the reason for production to decline to 2742 barrels on January 1, 1932. During 1932, the field was held on a retarded rate of production, keeping in effect the repressuring activities to a certain extent, but on January 1, 1933, production had dropped to 2276 barrels, still approximately 1250 barrels above the decline curve.

The field was given a greater amount of attention during later years, with gas injected at the rate of about 65,600,000 cubic feet per month in January, 1934, with a year's loss of production of only about 70 barrels per day. Increasing the amount injected to about 70,000,000 cubic feet during 1934, which shows January, 1935, to have consumed 69,820,000 cubic feet, repressuring produced an average of 2176 barrels, which was about 1300 barrels above the rate of production set out on the normal decline graph.

For the years of 1934 to 1938 inclusive, with the first five months of 1938 given, the average yearly rate of gas injection was approximately 847,900,000 cubic feet, varying from a low of 65,600,000 cubic feet for January, 1934, to a high of 76,035,000 cubic feet for January, 1937. For May, 1938, the amount injected was 74,907,000 cubic feet, with a production area served with 279 pumping wells.

During this month, the total oil production for the repressured area was 71,262 barrels, or a daily average of 2375 barrels; which figure is about 1925 barrels per day above what might have been produced under practices followed before repressuring was established.

Gas for repressuring was obtained from the field, produced from the Blossom sand by recycling, and obtained from pipe lines running to the field from outside sources. When Cotton Valley was opened for distillate production in 1937, sufficient gas was made available to pipe from Cotton Valley to Haynesville for repressuring. This gas is delivered to the Haynesville project at sufficient pressure to be introduced into the sand without compressors. Thus, the reservoir energy from one field is being utilized to produce oil from another, and with a distance separating them of about 25 miles, each producing from an entirely different formation under opposite sets of conditions.



Battery of separators on Ohio Oil Company's Cotton Valley leases which separate distillate from gas piped to Haynesville for repressuring.

When the input wells were set apart for injection of gas into the Blossom at Haynesville, casing seats were found to be in excellent condition. Therefore, no extra work nor expenditure of equipment was required to recondition leases. Naturally, gas lines were laid from the gasoline plant to carry the input gas, which were connected to the opening at one side of the common casinghead, allowing the gas to pass downward to the sand through the string of pipe. Tubing is not used for injection, neither are packers required, for it was discovered early in the project that sufficient gas could be admitted to the formation without the requirement of packed tubing.

In many of the wells, pressures run relatively high, in some cases as much as 275 pounds, gauge, being required to admit sufficient gas to obtain desired results. In other wells the sand takes the proper volume with pressures as low as 18 pounds. Tightness of the sand and vertical shale partings may be the cause of higher pressures being required in some wells than in others, but as no new wells have been drilled for input, nor any wells drilled in the area for production, cores are not available for analysis to show just why a wide variance in pressures is necessary.

A large portion of the 32 injection wells used in Haynesville are standing as they were when on the beam for oil producers. Gas engines are in the engine room, and belts on band wheel and engine pulleys. The strings of rods and tubing are left in the hole, with the working barrel and gas anchor as they were originally. When fluids collect in the input wells, or they show a predisposition to slow down the input volume, they are pumped for a short time, which usually cleans out what obstructing matter is in the hole, with gas passing freely as before. At other times an injection well may show a tendency to slow down the intake of gas and then suddenly clean itself out and take the required volume without difficulty. Reasons for these peculiarities are not forthcoming; one may be that the gas dissolves some of the paraffin in the grain structure of the sand, and again channeling may take place which allows the gas to flow freely through a new path.

However, when an injection well is found to show evidence of channeling, by nearby producing wells suddenly producing more gas than normal, two methods are followed. One is to place a higher back-pressure on the pumping wells, and the other is to slow down the input volume of gas passing to the input well at fault. Gas is metered to each well by orifice meters, with automatic controllers placed in the feeder line near the instruments. Charts are collected each day, computed and analyzed, so that exact conditions and input volumes may be determined.

Producing wells are usually tubed high enough that the sand face is covered with oil at all times, whether when pumping or when they have made their required amount of oil. By doing this, clogging of outlet pore spaces is eliminated, with the oil dissolving the paraffine more readily than if pumped dry.

Constant Check and Repair of Stock Tanks

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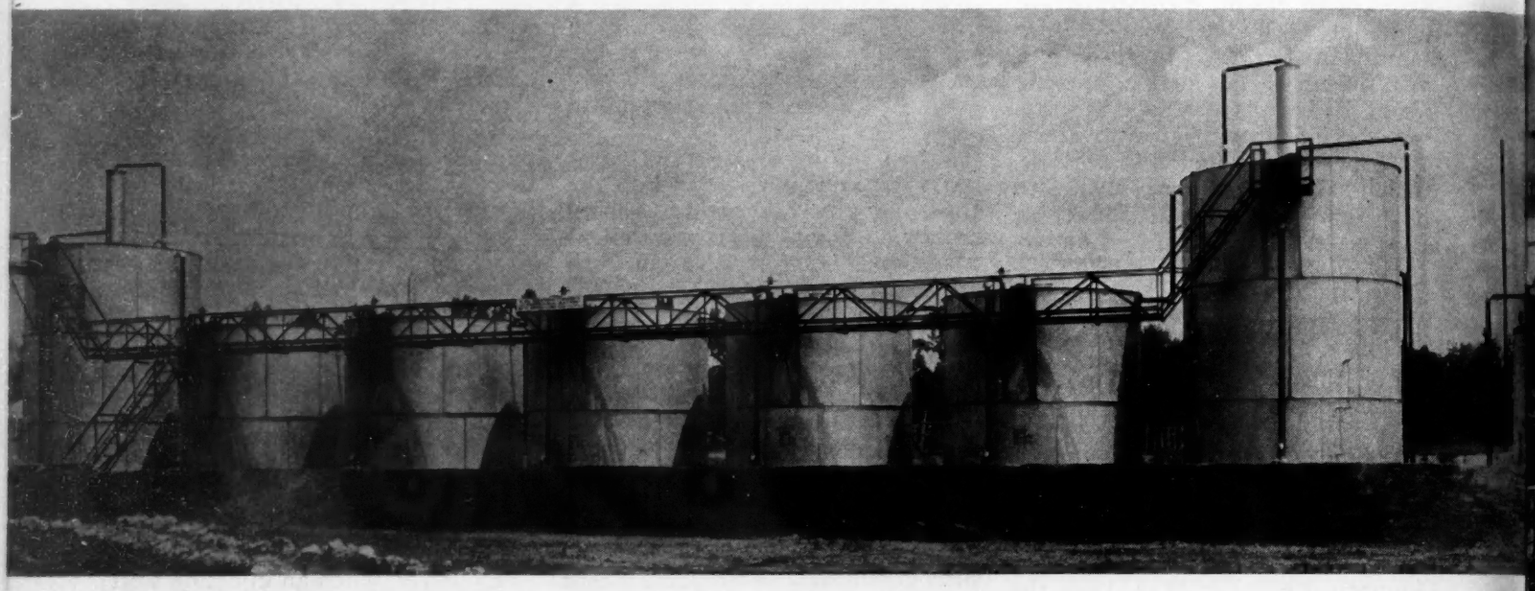

Continuous upkeep of lease tanks is an economy program that pays continuous dividends. Additional revenue is realized both by higher gravity crude delivered to pipe line and by conservation of lighter fractions which increase the volume of each pipe line delivery. Lease tanks in ill-repair can easily account for volume losses exceeding three percent of the production.

By FRANK TAYLOR
Staff Writer

THERE is no thief like an old thief, and no production thief to equal an old lease battery in ill-repair. Bottom and side sheet leaks are soon noted and plugged, but losses occasioned by open vents, poor gaskets and general inattention are not detected so readily. And in final analysis these continual losses through evaporation are far more costly to a production department than are fluid leaks.

Evaporation losses cannot be measured by a gauge stick, nor are they otherwise physically apparent. The instability of crude oil, plus its expansion upon release of pressure, or its expansion under normal field temperature, effectively tends to mask the magnitude of evaporation losses. Although all operators know that many of the lighter fractions of crude are lost in lease tanks that are not vapor-tight, many consider that these losses are not economically preventable. That such is not the case is being conclusively proven by a major operator in the upper Mid-Continent. Comprehensive tests, and reports of before-and-after characteristics of production in lease tanks prior to delivery to pipe lines, show the value of keeping tanks vapor-tight.

Briefly, by way of explanation, losses from evaporation may be gauged by a number of methods. Of these, three are more common. The vapors escaping from held crude can be measured. This can be accomplished by actual measurement by meter of gas escaping from otherwise vapor-tight tanks. In these determinations it is essential that the only outlet of the tank is through the measuring device. Also, the method obviously cannot be used with tanks that incorporate floating roofs or other means of compensating for changes in vapor volumes. In applying the principle, another circumstance must be given allowance; that of the return of vapor or air into the

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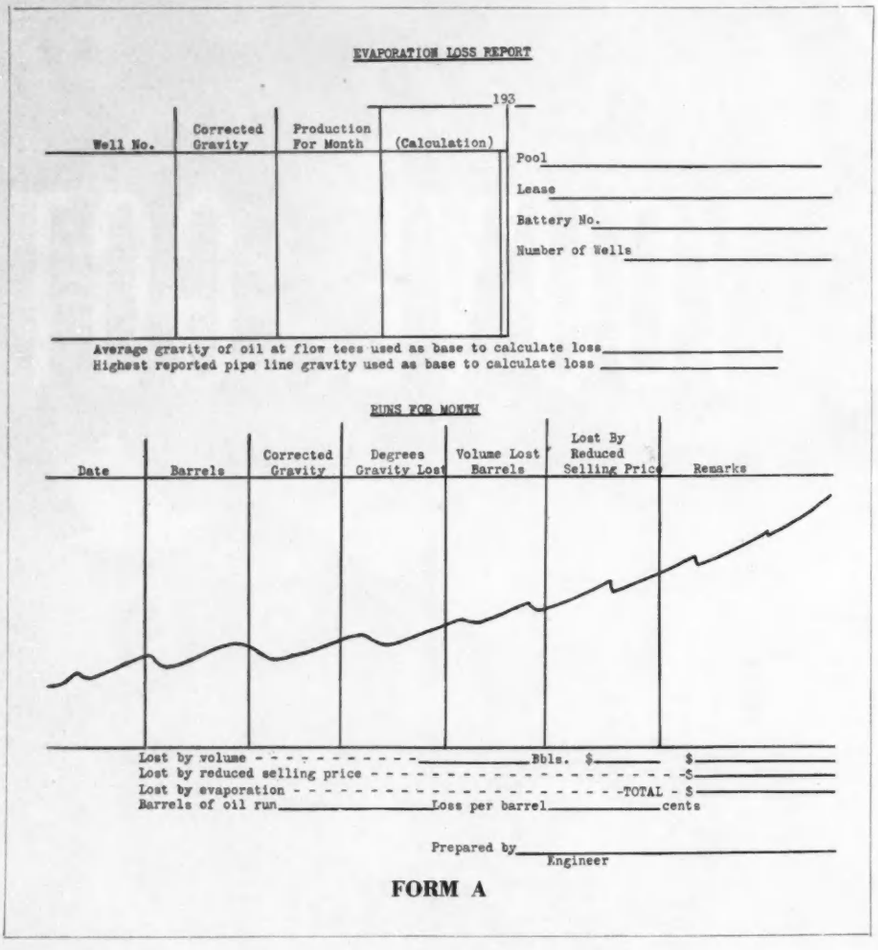

EVAPORATION LOSS REPORT

193__

Well No.	Corrected Gravity	Production For Month	(Calculation)

Pool _____

Lease _____

Battery No. _____

Number of Wells _____

Average gravity of oil at flow tees used as base to calculate loss _____

Highest reported pipe line gravity used as base to calculate loss _____

RUNS FOR MONTH

Date	Barrels	Corrected Gravity	Degrees Gravity Lost	Volume Lost Barrels	Lost By Reduced Selling Price	Remarks

Lost by volume - - - - - - - - - - - _____ Bbls. $_____ $_____

Lost by reduced selling price - $_____

Lost by evaporation - TOTAL - $_____

Barrels of oil run _____ Loss per barrel _____ cents

Prepared by _____
Engineer

FORM A

tank following a decrease in temperature or pressure resulting in a contraction of the crude volume and a parallel decrease in the process of vaporization. These functions act to produce a return flow, making the passage of gas through the measuring device reciprocal rather than constant. A variation of the vapor-volume principle that has been successfully applied involves the taking of temperatures of the fluid surface and temperatures of the vapors. These, correlated to the vapor tension of the constituents of the crude in relation to their percentage of the whole, gives a basis for computing vapor losses as a direct function of the temperatures noted.

The fluid-volumetric method, and the one probably most widely used in experimental tests, is based upon actual fluid measurements of the crude. Any accurate means of arriving at the volume of crude contained in the tank during the stages of the tests should be satisfactory. Coincident with gauging of the volume of crude, the temperature of the oil should be determined, and the volume corrected to 60° F. As an example, if a gauge shows that 150 barrels of crude is contained in a field tank, it is known that the crude held is of 40° API gravity and it is found that the temperature of the fluid is 45° F., then the volume corrected to 60° F. is 151 barrels (plus). Any difference noted in the contents of the tank under test is a rather accurate gauge in barrels of fluid lost as a direct result of evaporation, provided that the tank is otherwise tight.

The coefficient of expansion of crude, a necessary factor in the described method of arriving at loss through fluid-volumetric measurements, is not a constant with various crudes, although it generally increases with increased gravity. For greatest accuracy an analysis of a representative sample of the crude oil under test should be made, and the coefficient obtained from the findings of the analysis. Also, in obtaining the temperature of the crude in storage, care must be taken to insure the finding to be the average temperature of the crude, and not only the surface or bottom temperature. This might make desirable the taking of two or three temperatures at different levels in the tank.

By the other method of determining evaporation loss the physical characteristics of the crude initially stored is checked against the same factors at some subsequent time to arrive at the extent of the losses. These checks may be in the nature of a distillation run, or may be common gravity "takes."

By whatever method evaporation losses are determined, two influences are always present. First, by evaporation the volume of crude is reduced, and, second, as the reduction of the volume is mainly through loss of the lighter fractions, the gravity of the crude is reduced.

Any tests made in the field of the extent of losses occasioned by evaporation could become involved and costly. Particularly would this be true if the tests were made with frequency or over a period of time. As a consequence the engineers in charge of the work now under way to conserve volumes and gravities in lease production equipment chose a simple check that is a variation of the physical characteristics method.

Basic Check Made in Field

The manner of checking adopted is through obtaining contrasting gravities; or gravities of the crude as it is produced into lease storage, and as it is put into pipe lines after storage in lease equipment. The gravity of the production may be referred to as the flow-tee gravity, while the tests determining the merit of the work would be the gravity of the crude upon delivery or sale to the pipe line.

In this respect, the flow-tee gravity might not be necessary to obtain as reference to past deliveries from lease storage to pipe line would give a gravity value approximately, or exactly, equal to that of the flow tee. This would be the highest pipe-line gravity recorded, for it is reasonable to assume that at some time during the past history of the well, a pipe-line run was made immediately upon filling lease tanks. Consequently, the gravity of the delivery would be that of the flow tee, as there would not have been time for evaporation losses to take effect. It is relatively certain that in any event the highest pipe-line gravity would be no higher than the flow-tee gravity, and for all ordinary purposes would suffice in accuracy. New production, on which past runs might not give a satisfactory production gravity, should be checked at the well head to eliminate the possibility of assuming a gravity

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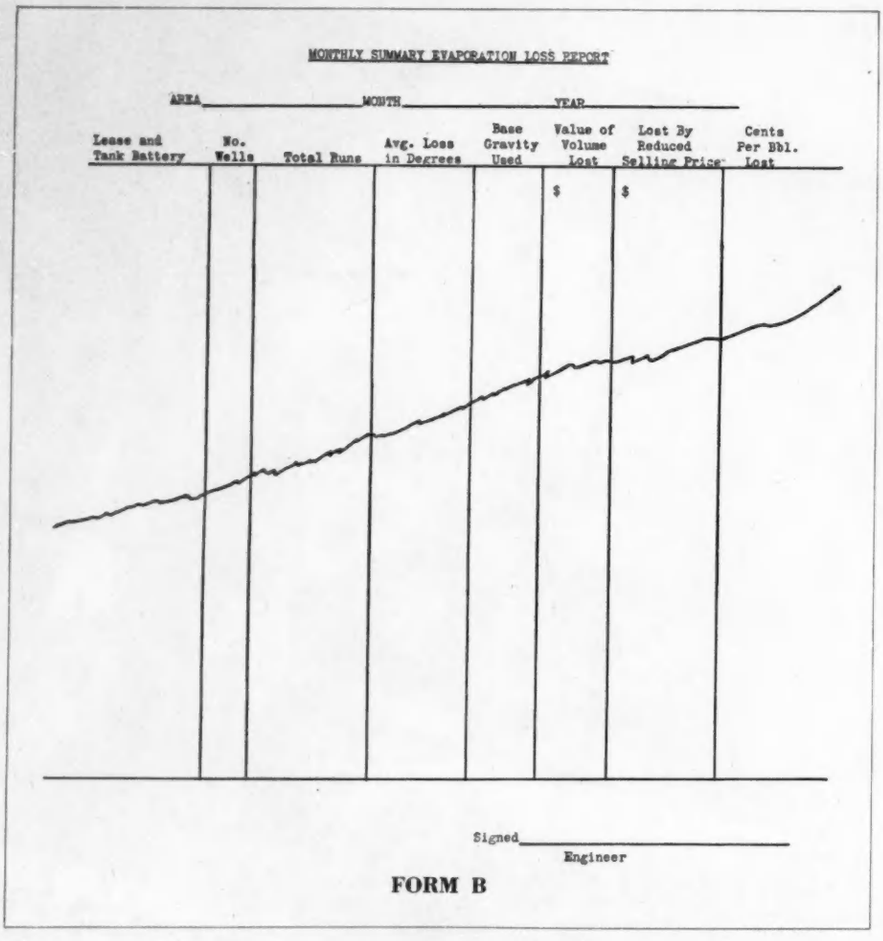

FORM B

factor out of line with actual production.

In using as basic information the before-and-after gravity checks to determine the efficiency of lease storage, or the economy of a program of repair and maintenance, the gravity factors must be turned into actual dollars and cents. This can best be accomplished by considering that gravity loss is equivalent to volume loss. It then follows that any differential noted between the flow-tee gravity and the gravity of the production as delivered to pipe line may be expressed in terms of barrels loss.

As the leases and wells under examination produced crude that generally tested between 37 and 42 degrees gravity, a gravity to barrel conversion factor of 2.5 percent loss in volume for each degree loss in gravity was established. This factor is applied merely by multiplying the loss in degrees gravity by 2.5 percent, and then multiplying by the actual crude in lease tanks. Assuming the gravity differential, or the difference between the before-and-after checks, to be .5 of a degree, this multiplied by 2.5 is 1.25 percent. Applying this to a volume of tanked crude of 150 barrels proves an actual volume loss of 2 barrels. All gravities are corrected to the accepted base of 60°.

In the application of the 2.5 percent loss per degree gravity factor to general crudes, the conversion is made with fair accuracy. The degree of accuracy is sufficient for all ordinary purposes. With crudes of somewhat lower gravity, the conversion factor would be less, possibly nearer 2.4 percent per degree. Conversely, with crudes of substantially higher gravities, the conversion factor would normally be greater than the expressed 2.5 percent, and could go to 2.8 percent or still greater with exceptional crudes.

In deriving the correct flow-tee gravity as the basis for the conversion, it is necessary to consider mixed crudes where two or more wells produce into the same storage. In such cases the operators have checked the gravities of the production from each of the wells, and calculated the average on the basis of the volumes produced from each well in proportion to the total of the lease. In cases where each of more than one well produces crude of the same gravity, it is not necessary to correlate the productions, as the conversion factor would remain the same.

The Use of Reports

In order to ascertain the relative merit of the tank repair and upkeep it was essential to tabulate the before-and-after conditions and conversions for comparison. Following conditioning, it was also essential to follow through by continuing a report of production data. This daily information, compiled into monthly summaries, resulted in a simple means of continuously checking the effectiveness of the control. In addition, unaccountable variations were found to represent an excellent clue to field conditions that required immediate attention.

In keeping with the economy measures adopted, reports and forms were simplified as much as possible without sacrificing important detail. The daily form (A) used in the field is the basis for the work, and entries are made with each change of lease operation. This report is retained in the field after completion. From form A, form B is compiled, which is dispatched to the division office.

In form A as illustrated, three wells are considered, producing crude of 36, 38 and 37 degree gravity, respectively. Production was 200, 400 and 600 barrels, respectively, or a total of 1200 barrels. Multiplying the gravity by the production of the individual wells, then dividing by the total production ($\frac{44600}{1200}$) is the calculation to obtain the average gravity for the total production of the lease. In the case in point, the calculated gravity is 37.17 degrees corrected. This is entered as the flow-tee determination, although if the lease had but a single well, the highest pipe-line gravity would most likely be used. Runs from storage are listed as to date, barrels and gravity. The gravity of the runs are subtracted from the previously recorded gravity to establish the gravity loss which is entered in the next column. From these two gravities, by the use of the conversion factor of 2.5 percent, the volume loss is calculated and entered on the form.

In addition to the actual loss through evaporation, which is re-

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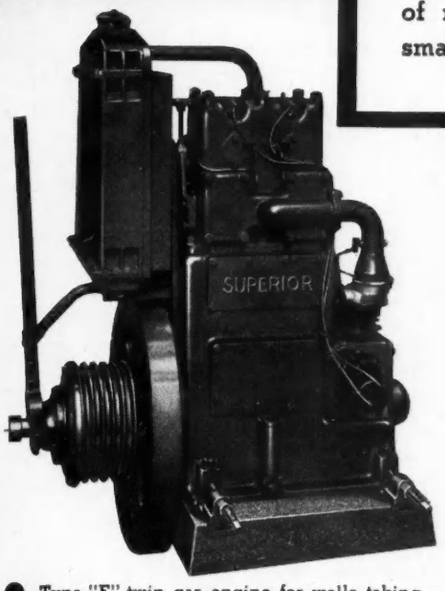

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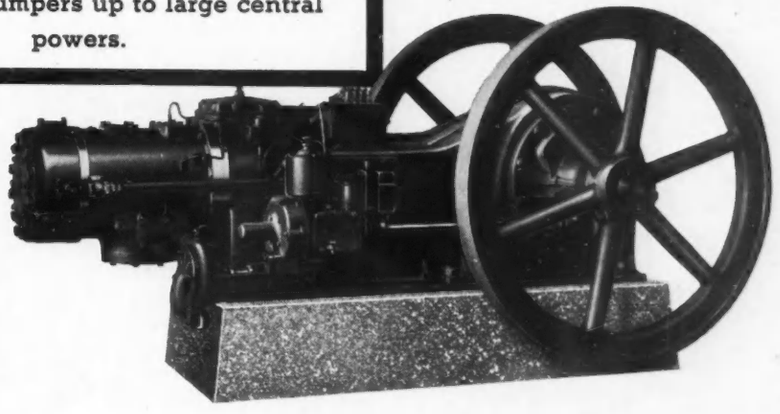

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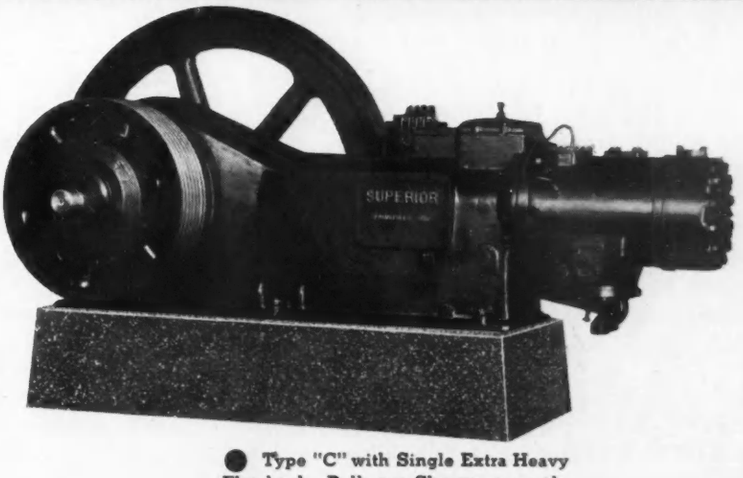

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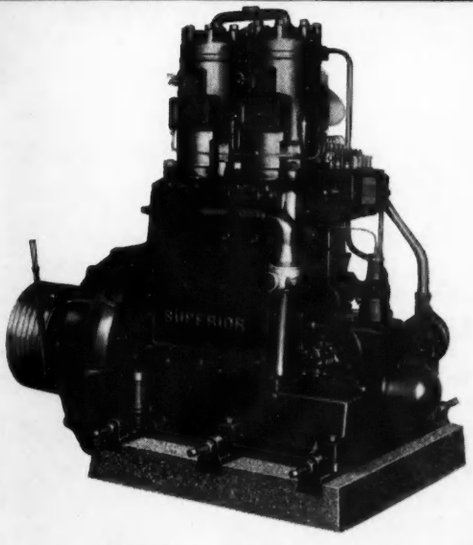

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TABLE I

Area No. 1	Runs	Pipe Line Gravity		Gravity Increase	Saving in Volume Loss	Saving, Value Volume Loss	Diff. in Selling Price
		Before	After				
Lease A	619	30.66	31.26	.60	9.4	10.50	12.38
Lease B	772	38.76	38.62	.06	1 9	2.40	None
Lease C	826	36.70	36.96	.14	2.1	2.60	16.52
Lease D	2,813	36.14	36.75	.61	43.0	52.50	None
Lease E	1,995	36.24	37.14	.90	51.1	63.30	39.90
Income resulting from program..		.....	.....	.....	.....	131.30	68.80
Total	.....	.....	.....	.....	.....	.....	$200.10

corded in barrels-volume decrease, there may be an additional loss in dollars and cents through direct decrease in the gravity of the production. This loss would be present each time the gravity of the production was lowered from one price bracket into another. Provided that the flow-tee gravity of the production on a lease was checked at 37.2 degrees and the gravity when delivered to pipe line was checked at 36.8 degrees, a decrease of .4 of a degree of gravity would result. In any area where the price range was based on the crude gravity, a devaluation of the delivered crude would automatically result. At 2 cents per degree, the total devaluation of the delivery would be 2 cents multiplied by the total barrels delivered to the pipe line. If 200 barrels of crude had been delivered, the loss attributable to reduced selling price would be $4. This final loss, provided that it is present, is entered in the next to last column of form A. At the bottom of the form is a summary of the month's activity showing the total volume loss expressed in barrels and in dollars, the loss resulting from reduced selling price, the value of the crude lost through evaporation, the total barrels run, the average loss per barrel and the total loss from both volumetric and valuation decreases expressed in dollars and cents.

Form B is expressly a compilation of the daily report, showing the various leases producing in an area and the losses involved on each lease. The volumetric loss in barrels is not entered on this form. Instead, the monetary value is directly indicated both for loss in barrels and for a reduced price bracket. This total loss per barrel is determined by dividing the sum of the two losses by the total barrels run during the period. A grand total is obtained to complete the report by adding the number of wells in the areas, and by totaling the runs, the value of lost volumes, the loss sustained by reduction of the selling price, and the total loss as a whole figure and in a per-barrel relation to the total barrels of crude handled during the period.

Results as Shown by Comparative Reports

For the sake of comparison, a number of before-and-after determinations and interpretations are given and analyzed to arrive at a comprehensive idea as to the effectiveness and economy of the measures applied to reduce losses sustained at the lease. The items in Table 1 are representative.

By way of explanation, the runs from the various leases were judged on the basis of the minimum, overage being adjusted. Two months were considered in the comparison, the month following application of economy measures in 1938 and the corresponding months prior to the conditioning work in 1937. This was done to eliminate, so far as possible, any tendency for the period of the year to influence conclusions.

It is immediately apparent that a considerable saving has been obtained. The $200.10 is added net income from the 5 leases for the period of one month. Approximately 65.6 percent of the net income was derived through control of evaporation to maintain a constant or nearly constant crude volume between the time the production was made and the time the tanked crude was dispatched to pipe line. Approximately 34.4 percent of the saving resulted directly from maintaining the gravity of the production above the gravity shown by pipe line runs prior to the program of maintenance. A total of 23 leases producing about 1100 barrels monthly that were compared in the manner shown gave a net profit of only slightly under $1000 for a corresponding month. This is an average of $43.50 saving per lease. A check of a number of leases for the purpose of arriving at an estimate of what might be expected by control of gravity alone, proved that prior to conditioning the loss was $0.1741 per barrel, but dropped to $0.0833 per barrel after putting the program into practice.

Conclusions

As the value of the program to the operating firm is dependent upon the cost of repairs made and new installations, in addition to the savings represented, the costs are vital factors. Fourteen leases were examined as to conditioning costs. The total expense was $387.00, an average of $27.60. This investment in economy was returned during the first month.

Work done consisted principally in tightening and caulking domes and decks, installing gaskets and springs in thief hatches, and the installation of gas-equalizing vents where necessary and the placing of 2-ounce stack valves to hold that back pressure on the tanks. In a few instances it was necessary to replace decks in view of the more complete program. Some painting was required. This work was all supplemental to routine operation on the various leases.

In areas prorated, a portion of the volume retained by reduction of evaporation may be classed as future income. This is evident in considering that the reduced income through evaporation decreasing the volume delivered to pipe lines is reflected in the production of the leases. By the program involved, the volume of the produced crude is held more nearly constant than without the program. As a result, it is not required that a greater volume of crude be produced than is dispatched, for shrinkage is largely eliminated. This leaves in the ground a somewhat greater reserve than would otherwise exist, resulting in a greater ultimate recovery measured on the basis of pipe line takes from the leases.

The advancement of the entire program has been based upon an expectancy of increased revenue from each barrel of production. Admitting that there are many influencing factors, the results show conclusively that a substantial increase in income has resulted. To assure practical control, all reports and checks were kept strictly practical.

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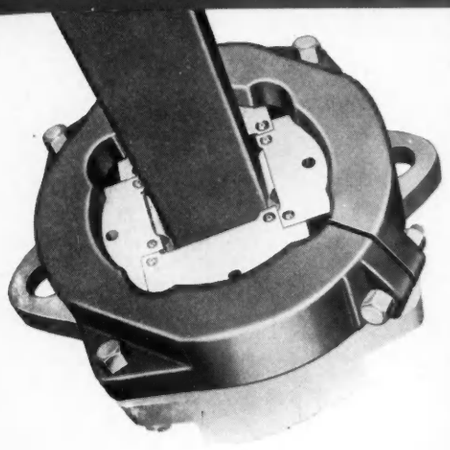

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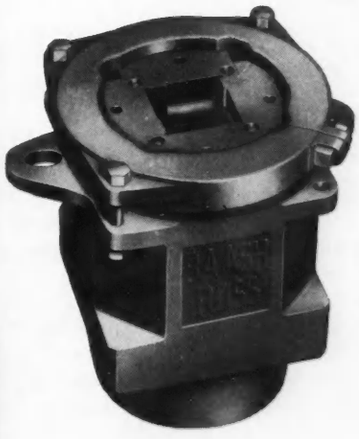

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CHARACTERISTICS, METHODS OF COMBATING AND ECONOMIC IMPORTANCE OF

Heaving Shales

By MICHEL T. HALBOUTY
Chief Geologist and Petroleum Engineer,
Merit Oil Corporation of Texas, Houston, and

NICOLAS A. KALDENBACH*
Petroleum Engineer and Geologist, Norman, Okla.

In the first installment of this series of two articles, which appeared in The OIL WEEKLY of October 24, the causes, characteristics, and geological and geographical distribution of heaving shales were discussed. In the accompanying final installment, the means that have been used are described, and recommendations are made for additional studies on this important subject.

Mechanical Practices in Combating Heaving Shales

THERE are two types of established practices in combating heaving shales: one, mechanical, and two, chemical, In order to comprehend these two types of practices used in combating heaving shales, we must first discuss more fully the causes of heaving shales.

Heaving shales contain definite characteristics which segregate them from other shales in the geological stratigraphic column. These characteristics are both chemical and physical and the chemical characteristic of practically all heaving shales are singularly based upon the presence of the mineral bentonite which is a hydrous aluminum silicate and which tends to absorb water from the mud very readily. As this water is absorbed from the mud, the bentonite swells and causes a wedging effect. The swelling and absorption of water is a creation of osmatic pressure which tends to increase, with the swelling, until a point is reached where the pressure and swelling becomes so great in the shale that the shale presses towards the point of least resistance, which is the drilled hole. Such an action causes the shale to fall and to slough into the hole. Practically all shales that contain this bentonite are subjected to such a condition, therefore, it is logical to assume that the primary preventative for such an absorption of water from the mud into the shale would be to keep out all excess free water. We can prevent over-diluting of the mud with water by close examination as to the exact amount. A series of tests should be made on the mud to determine the exact amount of water in the mud and also to determine whether this water is used as a dispersion medium or external phase in the forming of a colloid. If an excess amount of water is present in the mud, colloidal material, which should act as a dispersed phase of a colloid, should be added to the mud to enable the water, which is a dispersion medium, to unite with the dispersed phase and form a colloid. Any water to be added to the mud should be added strictly under the supervision of the engineer and explicit orders should be left on the drilling floor that when washing the equipment and the floor, that the resulting waste water should be prevented from mixing with the mud, to this purpose special boxes can be built underneath the floor to catch all this waste water. When coming out of the hole, instead of washing the pipe with water, a rag should be used to wipe the mud off the pipe. All the mud ditches and suction-pits should be covered by tin or boards to keep rain from falling into the mud during drilling. The cost of covering the pits and ditches is extremely negligible in comparison to the possible disastrous effect of one inch of rainfall.

The effect of gas on the mud will break down the walls of the hole and cause shale to fall into the hole. Gas cutting is a very direct cause of the heavings of shale. Gas may enter

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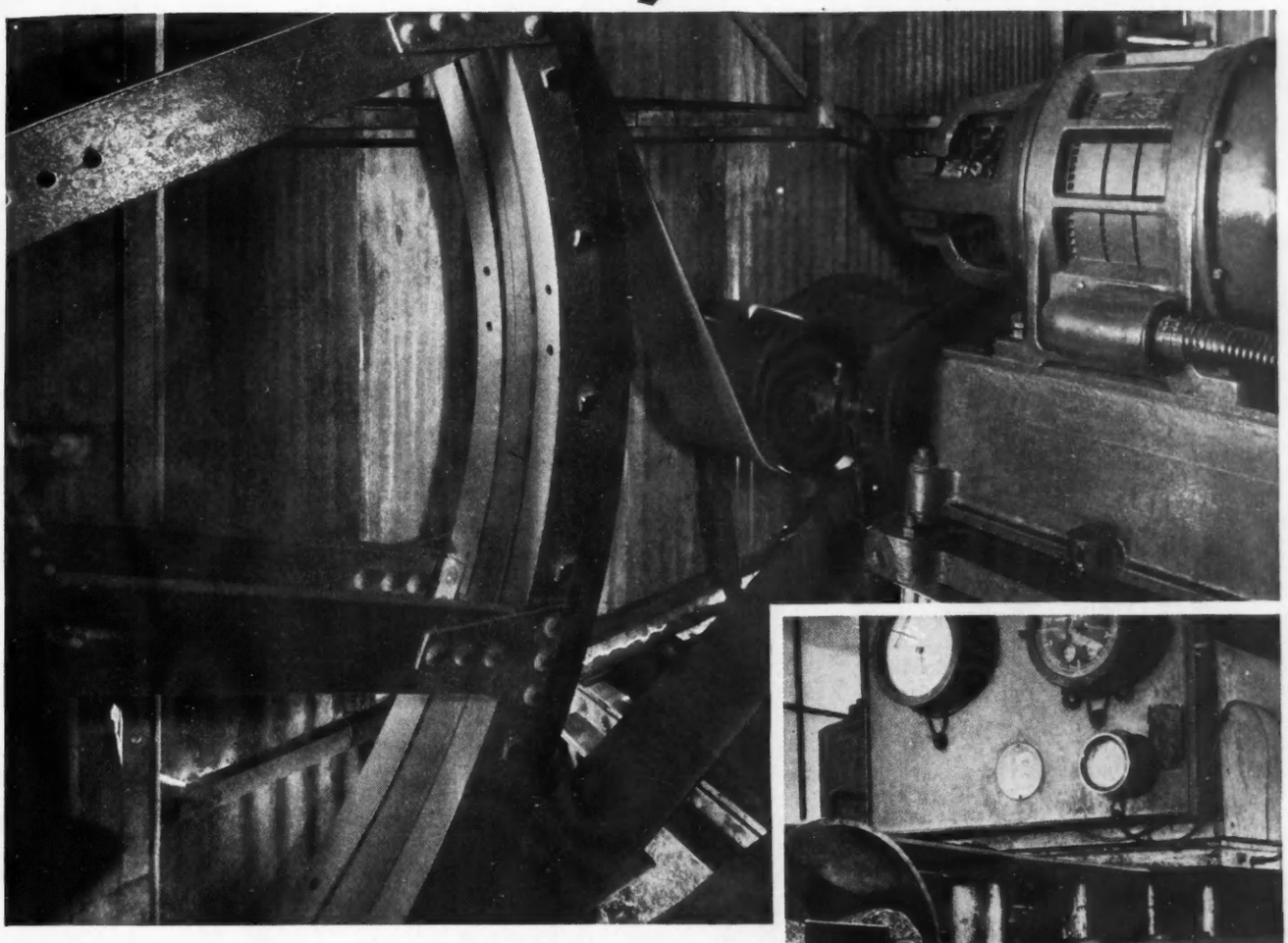

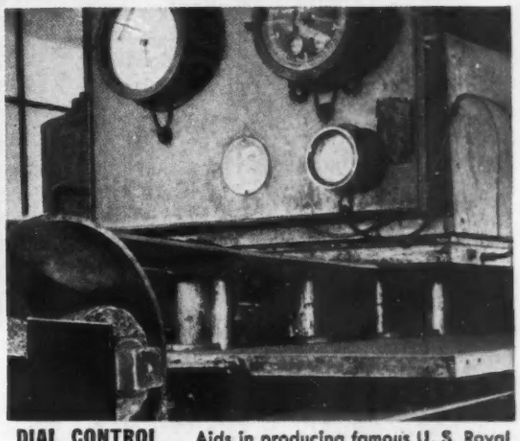

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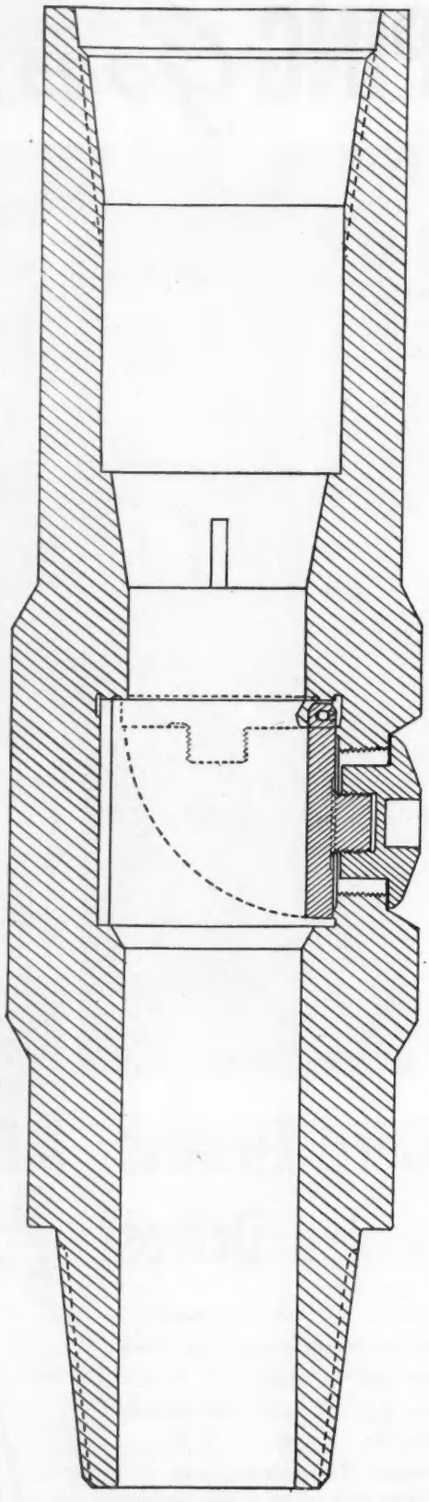
the drilling fluid from the formation in several ways. The most obvious method of the entrance of the gas into the mud is by the direct passage of the gas from the formation in sudden slugs or continuous bubbling or it may dissolve directly as it comes in contact with the mud. Regardless of the method of the entrance of the gas into the mud, it is logical to assume that the higher the gas pressure, the more gas will be dissolved into the mud. An approximate idea of the quantity of gas that may enter into a mud may be had from calculations based on the quantity of gas that may be dissolved in a cubic foot of mud: at 1500 pounds per square inch the volume of gas dissolved may be from 20 to 25 times the volume of mud in which it is dissolved. As the mud rises in the hole during circulation, a point is reached where the gas in solution commences to escape and if there is a sufficient volume of gas entering the mud from the formation and if circulation is continuous, the amount of gas in the mud will consequently decrease the weight of the mud which will automatically reduce the hydrostatic pressure; this reduction of hydrostatic pressure will cease to balance the gas pressure and a blowout will occur. Nevertheless, even though mud weight is added to the mud before a blowout occurs, if the gas is not noticed immediately and weight material added at once, the gas dissolved in the mud would effect the walls of the hole and cause the walls to fall away from the formation. This action, if occurring in shale, will cause the shale to heave in the hole. Operators can cure the effect of gas cutting by running the mud through one or more centrifuges, or separators, or both. The centrifuge shatters the mud in little particles forcing the gas to escape, such action taking place after the mud leaves the flow line. The centrifuge also conditions the mud as to the sand content; other foreign matter carried in suspension are taken out by the indispensable vibrating screens which are usually from 20 by 20 to 30 mesh. A type of separator devised by Pure Oil Company sucks the gas out of the mud by means of a vacuum (19" to 20" mercury) created by a steam operated exhauster placed on top of the separator.

The swabbing of a hole is a very serious action in the drilling of heaving shale bodies. The swabbing of a hole can be caused by the bit or the pipe being surrounded by cuttings or parts of the walls of the hole, which prevents the mud above the material



The continuous circulation valve joint is made in the form of a tool joint. It is about 30 inches long, and is placed at the top of every double of casing used as drill pipe. A 3-inch threaded opening is provided on the side. This opening remains closed during normal drilling operations. When adding to the drilling string, a mud hose is attached to the side port. The pressure causes the hinged flap to seat upward and close the vertical opening when the vertical pressure is reduced. This permits continuous circulation of mud while adding to the drilling string.

to pass around the pipe as the pipe is pulled out of the hole. This particular action creates a vacuum below the material as the pipe is being uplifted and this vacuum sucks in the walls of the hole and forces the shale to fall into the hole which endangers the pipe. Swabbing action in the Gulf Coast has been prevented first, by circulating the drill pipe out of the hole and secondly, by continuous circulation as the pipe is pulled out of the hole. In the former case, the mud is pumped into the hole as the pipe is being uplifted until a treble has been pulled out. Circulation is then stopped and after the treble is broken off a circulating head is then added to the first joint of the next treble and circulation resumed as the pipe is being pulled. In the latter case, the circulation is never stopped while the pipe is being pulled out of the hole. Special continuous-circulation-tool joints are used to acquire this particular action. In the severe cases, the latter type of circulation is recommended, however, in the majority of cases the other type has been used very successfully. In the more recent method of continuous circulation, special tool joints and pipe were designed to serve as drill pipe and casing. This is known as full-continuous circulation, whereby circulation opposite a formation is never interrupted from the moment it is drilled until the string is cemented in the hole. This is accomplished by running a full string of the semi-flush joint casing, which is also suitable as drill pipe, in combination with a collapsible wire line bit which is run through a stuffing box device. This full-continuous circulating method is more desirable than the semi-continuous circulation method because once the pipe is through the shale, drill pipe is then used as casing which protects the hole. The semi-continuous circulation is the method whereby after the hole is drilled to the desired depth with continuous circulating tool joints attached to a drill pipe string, the drill pipe is pulled out of the hole and a string of casing provided with a shale bit is rotated and washed down as a complete string and cemented, or as a liner on drill pipe and cemented through same. In both cases a back-off tool is run between the lower part of the casing string and the part equipped with casing or drill pipe with continuous circulating tool joints so that the latter can be recovered after cementation. Casing then is packed off as a liner or completed as a full string and bit-head or shale-bit milled out. It is to be cau-

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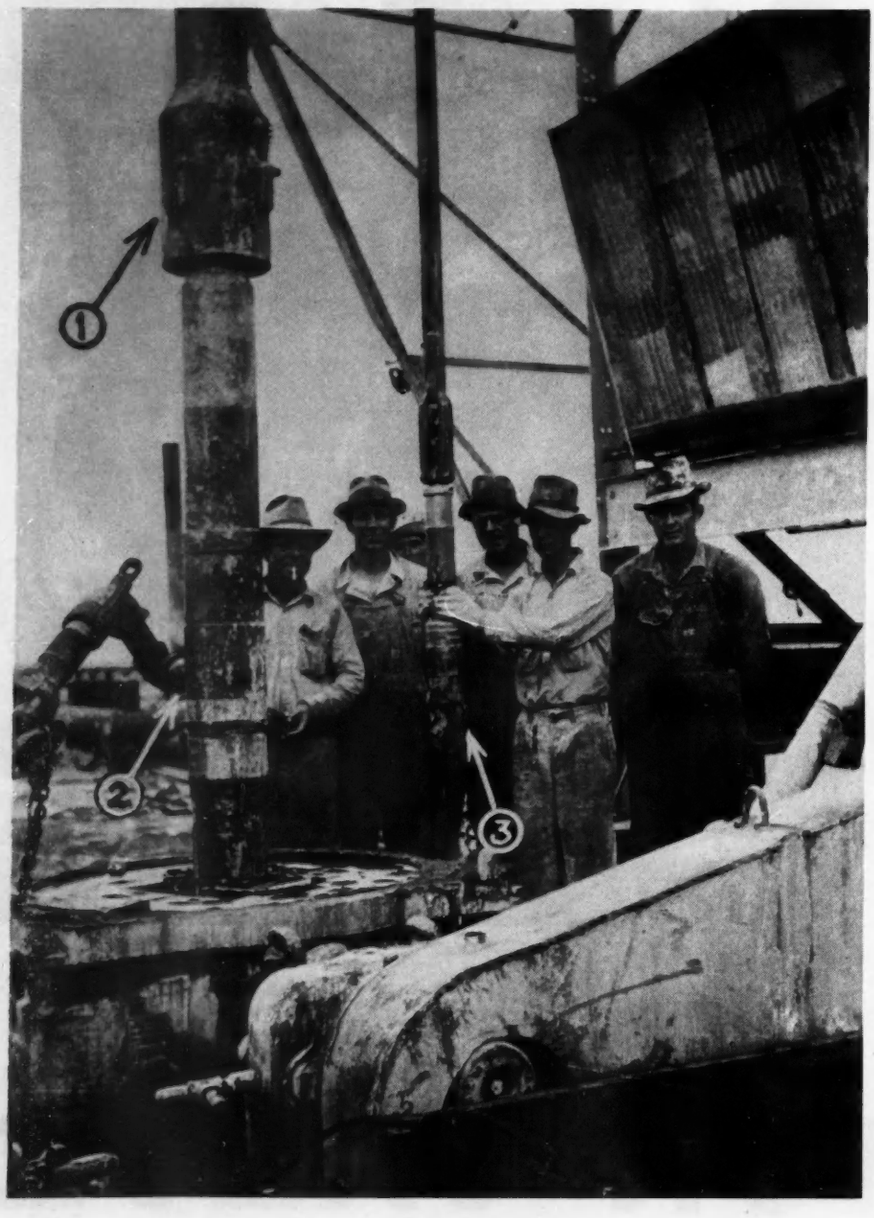

(1) The continuous side-wall circulating joint in position. (2) The hammer stabbing joint as it appears made up. (3) The collapsible wire line drilling bit. The operation of the continuous side-wall circulating valve is explained on the preceding page. The hammer stabbing joint has a male and female end, with the latter being lowered over the former and engaged by two wedge-like keys that are hammered into place. The collapsible bit permits it to be run inside the pipe, thereby not making it necessary to pull the drill pipe-casing.

tioned that when drilling with casing, it is advisable not to move the string upwards when adding a new joint. Therefore, the use of the square kelly is abandoned; instead every new single or double provided with continuous circulating tool joints is drilled down by means of either hydraulic rotary table, clamp-drives, or grip-rings. Upon the connection to the swivel which has to be made one or two singles above the derrick floor, the hammer stabbing-joint was developed and the pipe to be added is provided with the male end of this device.

The most important factor for guaranteed continuity for circulation is reliable equipment. Frequent compounding of the slush pumps make a third pump for stand-by use a common practice, however, the pumps are hooked up so that any combination of the two is possible. Everything which is subject to wear in the circulating system from suction-line to swivel-drillpipe connection, calls for a stand-by substitute, switching to which must be possible without interrupting circulation. This includes such items as stand-pipe manifold and swivel. The slightest hesitation might mean the loss of many days of constructive digging and the possible loss of the hole. It has been observed that with the advent of continuous circulation large fluid displacement has been most important. The need for this has been partly responsible for the development of pumps of such sizes as 16x8x24 for 350 pounds working pressure. Passages for these increased fluid volumes have increased in proportion throughout the circulating system: from four to five inch mud lines, stand-pipes, rotary hose and swivel pipe. Furthermore, it has lead to the universal adoption of the flush drill pipe and large circulating holes in the drilling bits. Some of the equipment which has been more or less universally adopted for ordinary wells has become indispensable on heaving shale wells. The most important among these are the vibration screens which serve the purpose to clean the mud of cutting, heaving material, excess sand, and other suspensoids which come out of the hole with the mud. The weight indicator has also become indispensable which reliably indicates the weight, torque and pump-pressure on the drill string and also the rotary table speed. The torque indicator is of special value in detecting an eventual heave before reduction of the rotary speed is noticed.

The above describes some of the mechanical features which can be used in the attack on heaving shales, however, an outstanding mechanical method of penetrating shales, which acquire a heaving characteristic because of their high angle of repose and which are associated with piercement type salt domes, is to employ directional drilling. ("Mud Treatment for Heaving Shale" by M. T. Halbouty, World Petroleum, May, 1936). Although the cases,

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Good drilling mud should stay in suspension without the separation of free water, even when stored in tanks for some time. Surface cracking is often considered a sign of the proper distribution of the colloidal particles.

in which complete evading of heaving shale is possible are very limited, directional drilling can at least be of help in reducing the thickness of heaving shale to be drilled in order to penetrate into the oil sand or in approaching the oil sand under an angle more favorable to the drilling of heaving formation. This method is especially recommended and applicable in all piercement type domes which carry heaving shales.

Chemical Practices in Combating Heaving Shales

Heaving shales can be checked to a great extent by means of chemically controlled or synthetic mud. More specifically the characteristic emphasized by the disintegration of the shale upon contact with fresh water is sought to be prevented by this means. Chemically treated mud also assists in the building up of the physical properties of a mud where viscosity and weight are controlled at will. Although practical, as well as laboratory experiments are carried on in most instances to a point where complete success seems to be obtained, the cases where the advocation of chemically treated mud can be counted upon to control heaving shale are still very limited.

It may be an advantage to restate at this point the primary functions of a rotary drilling mud so as to obtain a clear idea of the functions of a chemically treated mud. Satisfactory performance of a drilling mud depends upon its ability to meet certain basic requirements and is concerned with the following functions:

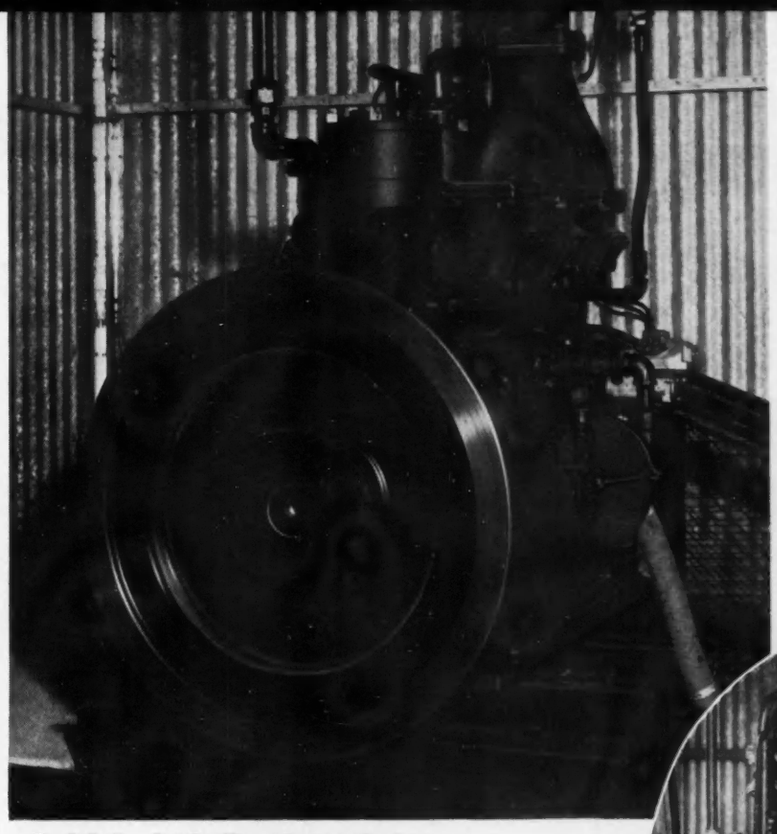
1. It should remove all cuttings from the hole as rapidly as they become disengaged from the formation; this is a matter of gel-strength.
2. It should hold all solids in suspension during the intervals that circulation is suspended; this calls for a minimum rate of gellation.
3. It should consolidate loose formations, thereby preventing them from sloughing and caving into the hole.
4. It should provide sufficient hydrostatic pressure to confine gas, oil or water to their respective reservoirs.
5. It should seal the walls of the hole so that the drilling fluid will not be lost from the system by penetrating into the formations.
6. It should lubricate the walls of the hole, the drill pipe, casing and slush pumps by enveloping the solid particles in the mud with a thin lubricating film.

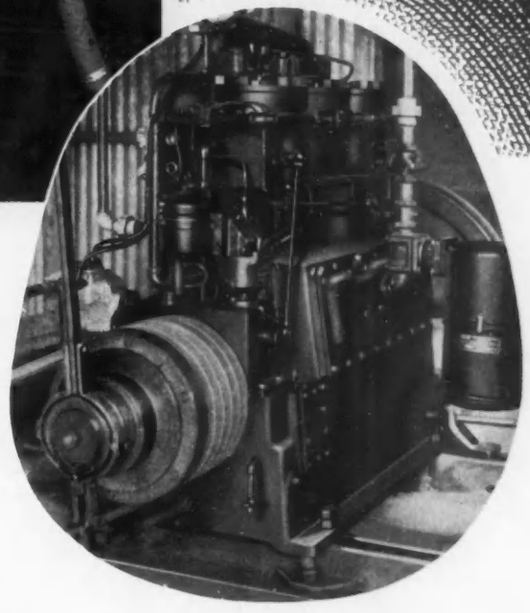
The design in maintenance of muds possessing the ability to meet these requirements is of vital importance to drilling operations and it must be borne in mind that, apart from special heaving shale requirements, a rotary drilling mud primarily has to perform these six functions and that any chemical added must not interfere with and preferably promote these functions and that where this is not possible, the disadvantages of one heaving shale chemical as to these functions must be offset by opposite properties of another chemical.

There are three basic principles according to which heaving shales are chemically attacked:

1. Rendering the mud inert as to the effect of the shale and its heaving characteristics (swelling of its bentonitic content, etc.)
2. Building fast and thin impervious walls, to seal off the formations from penetrating fluids: in some cases special emphasis is laid on extra mechanical strength.
3. Causing such chemical reactions with minerals present in the shale that an impervious and more or less solid precipitate is formed.

Typical illustrations of earlier attempts along chemically treated mud were the use of an oil-water mixture as drilling fluid and also the use of clays mixing with iron oxides and liquid sulphur. Later compounds used were a 40-50% calcium-chloride solution and a saturated 26% sodium-chloride solution as the fluid-phase of a mud. Although both compounds were instrumental in combating heaving shale, the calcium-chloride solution does not entirely prevent the shale from breaking into small pieces and the sodium-chloride





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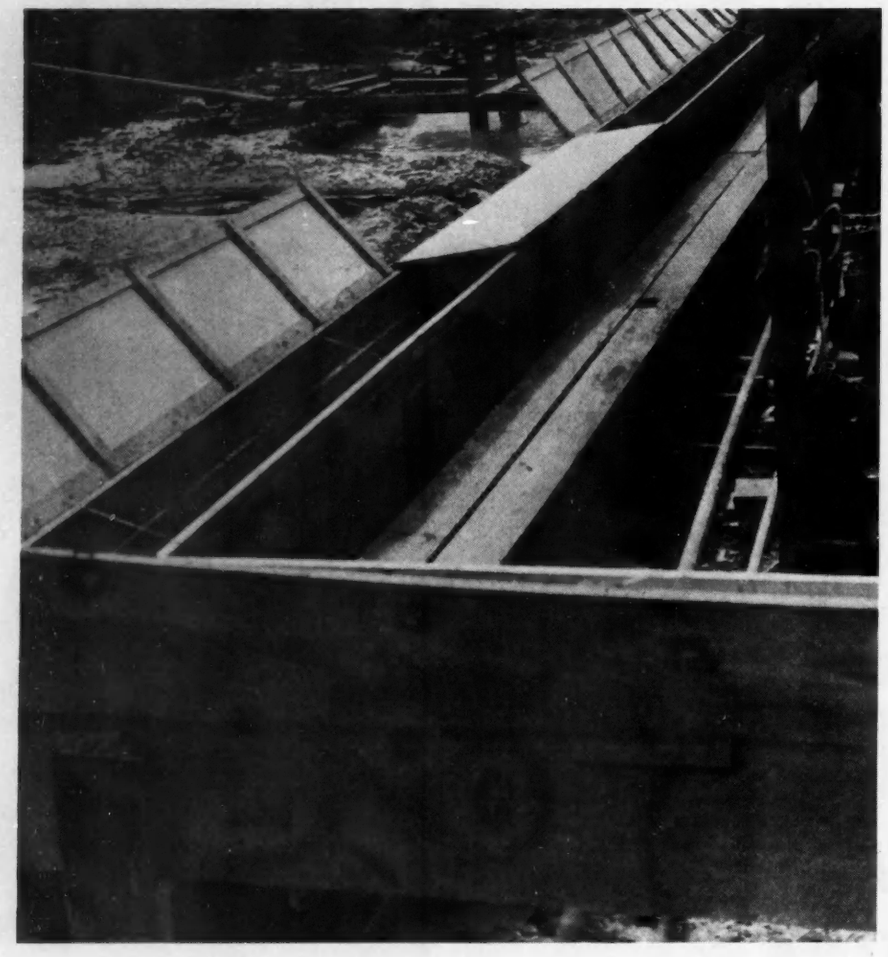

Covering of mud ditches and suction pits will keep rain from damaging drilling fluid, and may be done at small costs.

solution, though failing to completely hold a shale, only aids in preventing it from breaking down in smaller pieces.

Brine-mud has been used recently and although it is inferior to fresh water mud in sealing or walling up the hole with a thin filter cake, it does serve the purpose of preventing the bentonitic properties of a shale to swell. Brine-mud lacks the thixotropic gel as existing in a fresh water mud and this thixotropic gel is indispensable. Nevertheless, the relative inertness of a brine-mud towards heaving shale makes it a valuable compound to fill up unsaturated parts of the liquid-phase of muds in which other chemicals are used to combat heaving shales. Another chemical that has been widely used is sodium-nitrate. The liquid-phase of a mud, as used by some companies, consisted of 20% saturated brine and 20% of Chilean nitrate of soda, which makes a 16% nitrate in the liquid-phase. Such a mud can be raised to 12½-13 pounds per gallon by native clays, sometimes in combination with an acid type mud (which like brine-mud possesses no gel) and when necessary further weighted to 15 pounds per gallon by weighing materials. Since the nitrate, however, has no properties, which offset the unwanted sodium-chloride or acid type mud characteristics, the resulting slurry in non-gelling, but contrary to possible expectation, does not readily give up entrapped air or gas.

Another chemical that has been recently used extensively is silicate of soda. This chemical acts in the following ways:

1. When used in sufficient concentration, it renders the mud inert to any kind of heaving shale known.

2. To a certain extent it substitutes the bentonite in a fresh water mud in building a thin and effective sealing wall.

3. It is believed to react chemically with rock-forming materials such as calcium, magnesium and aluminum to seal the pores of the rocks and thus render them impervious and protect them from hydration; furthermore, this sealing action is almost instantaneous, hence more effective than can be secured through the use of the usually colloidal muds.

Silicate of soda provides gel-strength to the mud and in fact it has so much gel-building and walling-off properties, that the undesirable effects of a generous concentration of brine are completely offset. In experiments conducted by several companies it has been found that a concentration of 50 volume % silicate of soda in the liquid-phase of a mud and 50 volume % saturated brine protects most shales from hydration and that if the silicate concentration is raised to 60%, any shale is safe from disintegration. These properties and its attitude towards brine have made this silicate-mud one of the most experimented heaving shale combating mediums known at present and even though some companies consider its merits to be above many chemicals, it is still considered to be in an experimental stage; in some cases however, its failure has been recognized as being due to improper handling, lack of chemical knowledge and engineering training. This type of mud has to be watched more closely than any other type of chemically treated mud and consequently the least abnormality in the percentage scale would cause the mud to obtain a high gel-strength which, automatically increases viscosity and renders the hole subject to excessive swabbing when pipe is moved up or down in the hole. Improper handling of this mud has caused the walls of several heaving shale wells to fall and cause considerable damage. Companies like The Texas Company, Continental Oil Company of Delaware and The Pure Oil Company have conducted extensive research on this chemical and have had good success and these companies recognize its merits more than any other individual or company.

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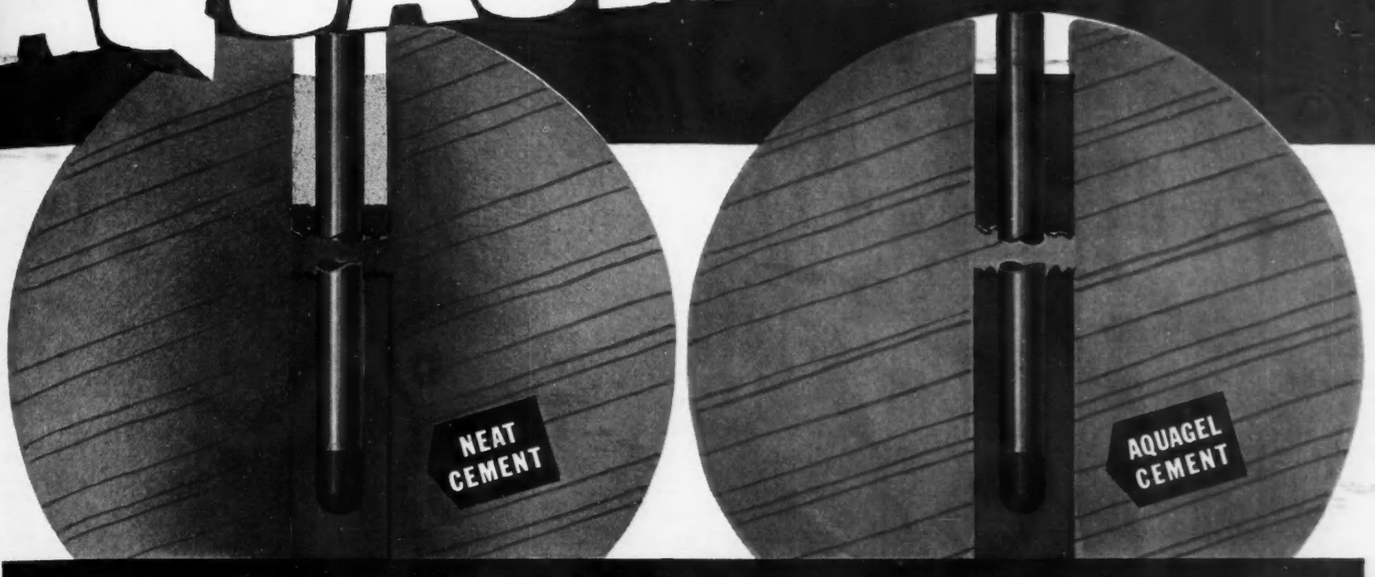

Neat cement shrinks because it loses water to the formation. Light blue area shows where cement was placed originally. Dark blue area shows set position of cement. Dark area outside of hole shows where water has entered the formation to be a possible handicap to production. Because of this shrinkage, neat cement slurries do not make as good, nor as permanent, a shut-off as AQUAGEL-CEMENT slurries.

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a great deal of this product, and which has conducted extensive experiments to determine the most appropriate composition of silicate of soda which would be most effective for heaving shale purposes, has composed different solutions with sodium-oxide and silicon oxide in various proportions. The best brand selected as the most efficient compromise between heaving shale protecting value and gel- and viscosity-forming qualities contains a 14½ weight % of sodium-oxide and 29 weight % of silicon dioxide. This brand therefore consists of 14½ plus 29, equals 43.5 percent by weight of solids and 56.5% water; this solution makes up 66-2/3 percent volume of the fluid-phase of the silicate-mud, the remaining 33-1/3 percent being made up of saturated brine (26 weight % sodium-chloride; 74% water); the 56½% water is not saturated as to the sodium-chloride, so that a higher sodium-chloride content than 33-1/3% is possible.

The gel- and viscosity-forming qualities of this particular chemical are probably caused by the silicate-oxide as is demonstrated by another brand of silicate of soda, made by this same company, and which brand has 8.85 weight percent of sodium oxide to 28.7 weight percent silica oxide (1:3.22) or 37.55% solids. This solution is used only for raising the silica oxide contents in the liquid-phase, when necessary, but causes too much gel and viscosity when used in large quantities as it forms, for instance, with brine an instantaneous solid gel. Silicate of soda therefore is a peptizing agent like lime on fresh water mud; it replaces bentonite in its gel-forming action and is inert to it; *a 2½% bentonite-solution in this liquid-phase settles out in rather short time, which correspondingly is an illustration of silicate-mud behavior towards heaving shales.* This peptizing action refrains the mud from readily giving up entrapped gas and an effective de-gassifying unit becomes absolutely necessary with the use of silicate-mud. The 66-2/3% silicate concentration is seldom reached because of excessive viscosity increase; about 62% is the practical maximum obtainable and furnishes an ample safety margin.

The fluid-phase of this silicate mud itself has a weight of 11.6 pounds per gallon and a Stormer viscosity of 5 c. P. at 120° F. When mud weight above 13.5 pounds is required, the mud is diluted with the liquid-phase to about 12½ or 13 pounds and further weighted with weight material to avoid excessive viscosity. It is a strong electrolyte, with a pH of 13 plus, which makes pH-correlation impossible. Although opinions differ on its effect on electrical logging, this survey is usually made before the change from fresh water-mud to silicate-mud as a precaution against complications.

Silicate and sodium nitrate muds are not affected by the ordinary viscosity builders (cement or lime) or viscosity breakers (quebracho, caustic soda, sodium carbonate or phosphates). This demonstrates the absolute necessity of ridding the mud of excessive quantities of suspensoids and maintaining the weight with weight material, all in order to keep the viscosity down.

The concentrations of the different compounds in the fluid phase of silicate-mud are determined by means of sodium chloride, sodium oxide and silica oxide.

Prior to 1936 companies used various forms of chemical compounds in the treatment of heaving shales and in one instance as many as 56 different chemicals were used to form 76 totally different formulas to experiment with muds in combating heaving shales. Out of the great number of chemicals used in experimenting with muds in the control of heaving shales only a few were found to be of any importance. The majority of these "survived" chemicals are used in the control of viscosity and gel-strength. The most effective of the viscosity reducers is the chemical hexa-metaphosphate, which reacts very quickly in reducing viscosity of an average mud. Other viscosity reducers are the sodium hydroxide—tannate solutions, which are many, as a solution of caustic soda and tannic acid can be mixed in varying proportions to react most favorably with the mud. A solution of gallic acid plus a small amount of di—sodium phosphate is also used as a reducer of viscosity. Most of the chemicals used in viscosity control are used in decreasing viscosity. For increasing viscosity, colloidal material and caustic soda is generally used. The gel-rate and gel-strength of a mud is increased by the addition of lime, colloidal material, caustic soda, sodium aluminate, or the other alkaline or soluble metal salts, and decreased by controlled treatments with caustic soda plus quebracho (crude tannic acid) sodium gellate or the phosphates. The phosphates are used to precipitate calcium which the mud accumulates as a calcareous base shale is drilled. A large amount of calcium is present in a mud after a cement plug is drilled, as cement contains considerable amounts of soluble calcium hydrate. A cement-cut mud is treated by the addition of di—sodium phosphate mixed with a protective colloid, such as tannic acid.

The trend in fighting heaving shales at present is to use as little chemicals as possible and particular stress is being made by companies to obtain only a few formulas which are extremely desirable in combating heaving shale. Experience has proven that the more chemicals used in the mud the greater the complexity of control of the mud. The native characteristics of a mud derived by the drilled formations should be utilized as much as possible. In heaving shale areas, the chemical characteristics of the heaving shale itself should be used for the basic characteristics of the mud. This idea is based upon the fact that like chemicals will not react against each other. Results of recent experiments conducted on heaving shales show that by crushing and grinding the cuttings or heavings of the shale into a powder and sufficient water added under pressure to absorb the colloidal material present in this ground up material, that the resultant mud has such characteristics as to form a thin impervious wall, maintain an ideal viscosity and fairly high gel-strength and gel-rate. A specimen of the heaving shale when immersed in this mud failed to break down or fall apart, whereas, in some muds chemically treated, this shale would crumple after a certain length of time. These experiments prove that a mud made out of the shale which was to be combatted was the most efficient, as well as economical, mud to use. Too much attention has been given to synthetic processes and little or no study towards the native chemicals supplied by the formations. Chemicals should be added so as to enable the mud to be controlled in a very simple manner, but under the present methods of using admixtures, the practice of mud control has become too complex. On many wells it has been recorded, that the slightest chemical change in a mud combating heaving shale is sometimes disastrous; heaving shale mud should be simply controlled and all native characteristics obtained from the formations utilized, and just enough chemicals added to control the most important factors of *any* mud, viz: a thin and strong impervious wall, gel-strength and rate of gellation, and viscosity.

On the other hand, chemicals do play an important part in ordinary mud control where heaving shales are not involved. Some chemicals play an

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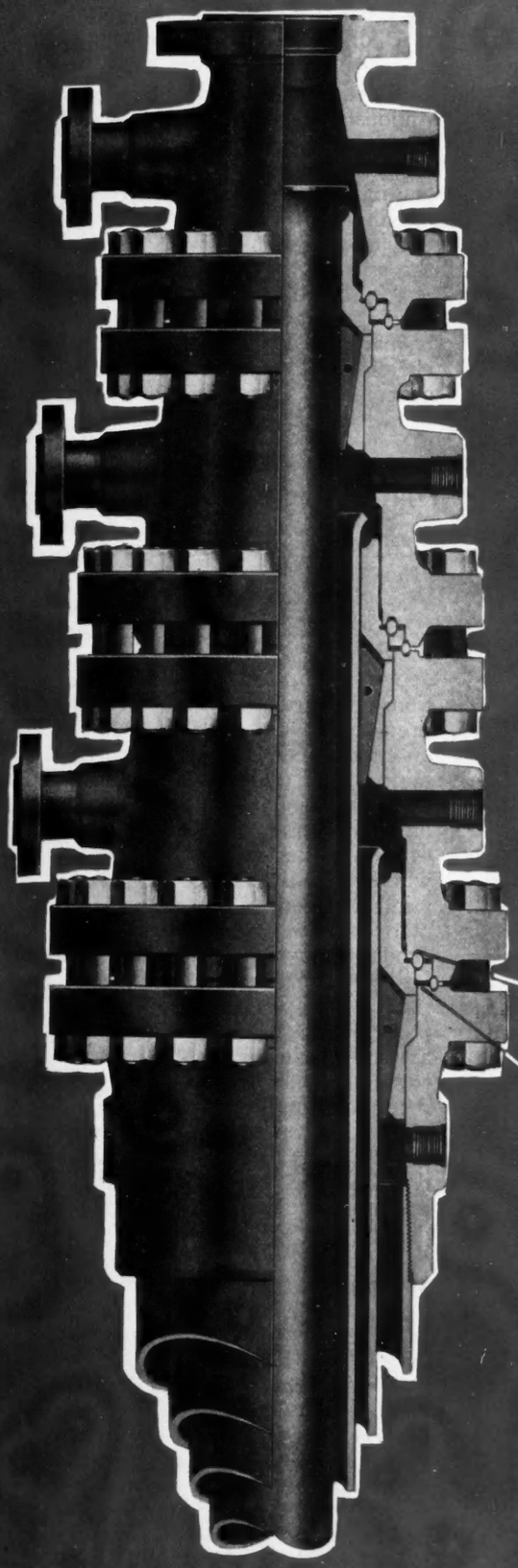


Illustration above shows a 18" x 13⅝" x 9⅝" x 7" Casing Head Hook-up, with a Cameron "Boll-Weevil" Type Tubing Head flanged above. Casing Heads for any casing program available for quick delivery.

GENERAL FEATURES

(1) Permits running, landing, cementing and suspension of casing strings through blowout preventer hook-up.

(2) Permits suspension of casing string at any point in the hole, should this become necessary.

(3) All-steel, A.P.I. flanged construction; available with threaded or flanged casing outlets.

(4) Starting heads available with male or female casing thread on bottom opening, and with integral landing base if desired.

SPECIFIC ADVANTAGES OF DESIGN AND CONSTRUCTION

(1) Leak-proof seal between flanges, and between casing strings, accomplished by Cameron FLEX-STEEL MULTI-RING GASKET ASSEMBLY, **which entirely eliminates flexible or resilient packings. Compression of steel seal rings controlled by outside flange studs—which are always accessible for tightening.** Steel gasket assembly provides maximum resistance to fire.

(2) FLEX-STEEL GASKETS hold down casing hanger assembly rigidly.

(3) Split-Slip-Bowl and Split-Slip assemblies easily engaged around casing string on derrick floor and passed through blowout preventer hook-ups. Auxiliary Welding Hanger, installed after casing has been suspended, prevents casing string from settling in slips and swaging due to sustained tension, vibration or other cause.

(4) Slip suspension permits landing casing at any point in the hole, without releasing tension in string, or setting weight of string on bottom while cutting nipple, etc.

(5) 45° bevelled seat in casing head serves as support for slip-bowl only—no seal being effected at this point. Mis-alignment or "cocking" of slip bowl, due to bit scars on tapered seat in head, are compensated by mis-aligning feature of FLEX-STEEL GASKET ASSEMBLY.

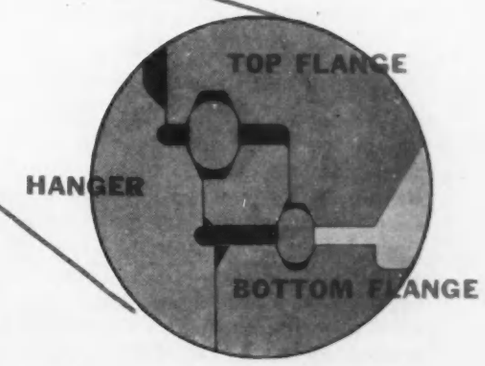
(6) All sealing is on polished steel surfaces applied at the moment of completing casing suspension operation. **No surfaces relied upon for a seal are ever exposed to damage.**

(7) All-flanged construction eliminates casing-size threads above surface pipe.

(8) Available with solid slip bowl having seal ring which seals annular space the instant pipe is suspended on the slips.

(9) All sizes are full-opening.

Illustrated descriptive pamphlet gladly forwarded to interested operators on request.



Close-up view of Cameron FLEX-STEEL MULTI-RING GASKET ASSEMBLY, the unique design of which provides an all-steel sealing and hold-down means, as well as a mis-aligning feature which compensates for any wear on 45 degree beveled seat in Casing Head.

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important part in modern drilling in controlling such mud phases as to reduce or increase viscosity, the liberation of gas, for building fast and thin impervious walls, for building tough impervious walls, for the reduction of the salinity of muds, for decreasing or increasing the alkalinity or acidity of muds, for keeping the mud gelled while circulation is stopped, for cleaning the walls from producing sand underneath the shale after casing is set, for the settling out of cuttings immediately as the mud reaches the surface, for relieving stuck drill pipe when circulation is still maintained and for many other uses.

The weighting of mud is extremely important in combating heaving shale. Sufficient weight must be maintained at all times in order to successfully close the gap in all phases of fighting heaving shales. The most popular weighting material has a barite base. Weighting materials must be handled with extreme caution as an overweight of muds is disastrous in combating shales. It is this particular factor of overweight that has been the cause of a good many failures. The engineer in charge should bear in mind, not unless gas is associated in the formations and is causing the mud to become gas-cut, that the primary function of the mud is to seal off the shale and that a convenient weight of such a mud should be 10 pounds to the gallon and not more than 11 pounds. Of course, if the gas is associated in the mud, the problem then becomes doufold: in combating heaving shale and also the gas, and it becomes necessary to add sufficient weight material to counteract the effect of the gas on the mud. In the Gulf Coast as high as 18 and 19 pounds muds have been maintained on heaving shale wells, however, in those cases, considerable amount of gas was associated in the shale. A heaving shale that also contains gas is considered as being the most hazardous of all types of heaving shales.

Equipment and Cost of Combating Heaving Shales

The mechanical equipment of a well that is scheduled to go through heaving shale is extremely important as this equipment must not only be the most modern obtainable, but also the most efficient. Special devices must be constructed in order to take care of the treatment of muds and special suction-pits and ditches must be built in order to insure proper circulation, as well as treatment for the mud. The engineer in charge should attempt to foresee any obstacle that might arise during the course of drilling and the equipment, to counteract these obstacles, should be on the location regardless of whether they are ever used. A definite casing program should be maintained in the drilling of heaving shale wells; for instance, if the heaving shale is expected to be at 8000 feet, then sufficient casing should be set, besides the surface string, to protect the hole to the depth at which shale is anticipated so as to give the operator every advantage in fighting the heaving shale and not being concerned with the open hole above the shale. In many instances, it is loose or consolidated water sand and non-heaving shales above the heaving shales which have been the cause of sticking of pipe and abandonment of holes even though the heaving shale was given credit for these unfortunate circumstances. As much as $125,000 has been spent for mud material alone in combating some heaving shale wells in the Gulf Coast. In the early days of fighting heaving shale, from 1930 to 1933, some companies used as much as $50,000 worth of mud material and as new methods were devised, this cost became greater. With the addition of new equipment to take care of the circulation of the mud, plus the cost of drilling and mud materials, the cost of completing heaving shale wells sometimes has amounted to as high as $250,000.

Suggestions

In the study of combating heaving shales, the authors are taking the liberty to suggest several important factors that must be considered in order to obtain a thorough knowledge of the problem.

1. Review and obtain copies of old literature and patents for proposed practices, etc., to combat heaving shale.
2. Promoting high fluid velocity in the annular space between drill pipe and formation by:
   - A. Higher pump speed by:
     1. Development of larger fluid passages in the circulating system.
     2. Decrease of mud-viscosity by:
        - a. Search for viscosity reducers, which affect heaving shale muds.
        - b. Search for heaving shale protecting chemicals which are affected by present viscosity reducers without destroying their protective qualities.
        - c. Substituting solids in suspension by heaviest weight material available.
     3. Elevating suction-pit tanks.
   - B. Promoting of the best proportions between hole-diameter and drill pipe; this may call for plugging off cavities or large holes and redrilling with a smaller size bit.
3. Since fluid-phase is lost continuously by seepage into the formation and by evaporation, it is logical to make up for this loss continuously in order to secure a minimum disturbance in the condition of the hole. This necessitates the mixing of chemicals in advance, which should be stored accordingly. Storage facilities should be maintained for already prepared chemicals. These facilities may be economically materialized in the future when a field has entered the stage of exploitation by building central mud treatment plants with pipe lines to the drilling wells.
4. Making de-gassifying units more effective by compounding two or more separators.
5. Designing of large pumps and large equipment to take care of the fluid displaced.
6. Periodical testing and inspection of circulating equipment to prevent blowouts and shut downs on critical moments must be maintained at all times.
7. An absolute fool-proof circulating system must be had in order to prevent mud from being pumped where it should not by the absent-minded action of the crew. Automatic stopcocks and control valves should be connected into this circulating system.
8. A complete engineering report should be maintained daily and every change in the mud recorded. Continuous weighing and determination of chemicals and physical properties of the mud should be maintained 24 hours a day. A slight change of any of the properties and its effect to the drilling should be noted.
9. Conferences should be held between the crew and the engineer prior to the advance of the crew to their respective positions each day. In this conference, the engineer should speak in terms that the driller understands and careful consideration be given to any suggestion that is made either by the engineer or by the crew to the engineer.
10. The correct drilling speed and other mechanical factors involved by the turning of the pipe should be maintained to the best advantage of the shale involved.

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WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Mexican Situation

U. S. embargo on Mexican oil sought . . . New export contracts reported . . . Eastern States puts plant under bond for refining foreign oil

Circulate resolution seeking U. S. embargo on Mexican oil

Advance publicity for legislative proposals looking to an embargo upon the importance of oil or other products from expropriated Mexican properties was distributed in Washington last week by unidentified interests.

Mailed in envelopes bearing the return card of the United States Senate—available to practically anyone—but carrying a stamp, a "joint resolution," in the next line incorrectly denominated "an act," called for a Presidential ban upon the importation from any country expropriating American properties, or any commodity of the type produced on such properties.

The "joint resolution," marked as a confidential draft, purportedly is to be introduced in the Senate next session. The tenor of the measure is in line with efforts recently unsuccessfully made to halt the importation of Mexican oil, which the Government cannot do without authority of Congress.

"Whenever the President shall find: (a) that property lawfully owned by any citizen of the United States has been expropriated or confiscated by the government of any foreign state; and (b) that the government of such foreign state has refused, or within one year after such confiscation or expropriation has failed, to make restitution of, or proper and adequate provision for payment for, such property," the "legislation" provides, "he shall proclaim such facts, and it shall thereafter be unlawful to import from such country, attempt to import, or cause to be imported, any raw material, or product or any by-product thereof, of the kind which was being produced on, in or from such property at the time of such confiscation or expropriation, or during the year of production next preceding.

"The President shall, from time to time, by proclamation, enumerate the raw materials, products and by-products, the import of which is prohibited by this act.

"Whenever, in the judgment of the President, the conditions which have caused him to issue any proclamation under the authority of this act have ceased to exist, he shall revoke the same, and the provisions of this act thereupon shall cease to apply with respect to the raw materials, products and by-products enumerated in said proclamation.

"Whoever, in violation of any of the provisions of this act, shall import, attempt to import, or cause to be imported any raw material, product or by-product, the import of which has been prohibited by this act, shall be fined not more than $1000 for each such offense.

"The words 'government of any foreign state,' as used in this act, shall be deemed to include any government, faction, or body of insurgents within a country with which the United States is at peace, which government, faction, or body of insurgents may or may not have been recognized by the United States as a government."

A canvass of members of Congress from the oil-producing states disclose none who knew of the proposal or had discussed the desirability of such legislation. Capitol officials in charge of the printing of drafts of bills for members also denied that the "resolution" had passed through their hands.

Michigan concern reported to have Mexican contract

Argo Oil Corporation, a Michigan concern, has contracted with the Mexican government for purchase of surplus Mexican oil, according to press reports attributing information on the transaction to Roy Fisher, president of the Argo company. Fisher returnd to Detroit last week from Mexico City, where he spent three months on the deal.

Plans are said to call for importation of about 200,000,000 gallons of oil annually, which would be refined and distributed, with the Argo company acting as agent.

Eastern States post bond for handling foreign crude

To simplify matters in the handling of Mexican crude oil by Eastern States Petroleum Corporation, Houston, the plant of the company, including the refinery and storage tanks, has been placed under government bond for the processing of foreign produced crude oil. Application for permission to bond the entire plant was filed with United States customs officials some time ago and was approved last week.

Under the new arrangement, the processing of oil from foreign crude will be carried on under the supervision of customs officials, and application for the appointment of four customs storekeepers at the plant has been filed.

Eastern States Petroleum Corporation, since August, has been importing crude oil from the Poza Rica field in Mexico, bringing the oil to Houston and paying duty and later, when the oil is exported in the refined state, applying for refund. Under the bond arrangement none of the oil processed at the Houston refinery can be withdrawn for use in domestic trade, but must be moved in foreign commerce.

Italy contracts for Mexican petroleum

Distribuidora de Petroleo Mexicano, Mexico's official oil distributing company has sketchily announced contracting with the Italian government for the sale of a considerable amount of oil and by-products, worth several million dollars, deliveries of which are to start very soon.

The deal was made with the Azienda Generale Italiene Petrole of Roma, a government organization, two agents of which have been in Mexico City for some time.

Although the bulletin was laconic it was understood that the deal calls for the building by Italy of five tankers for Mexico in exchange for oil.

Mexico takes over oil company offices

The Mexican government has expropriated the Mexico City offices of two American oil companies and the Monterrey office of another.

On October 22 it took over the Mexico City rented offices of Titania and Mercedes Petroleum companies, subsidiaries of Standard Oil Company of New Jersey, despite a temporary injunction granted by the second district federal court. Five agents of the ministry of national economy entered the offices and presented a brief document saying the government "needs the offices" to carry on its petroleum business. An injunction was served on the agents an hour after their appearance, but they retained possession, declaring the court order had arrived after they actually were in possession.

On October 21 the government expropriated the Monterrey offices of Continen-

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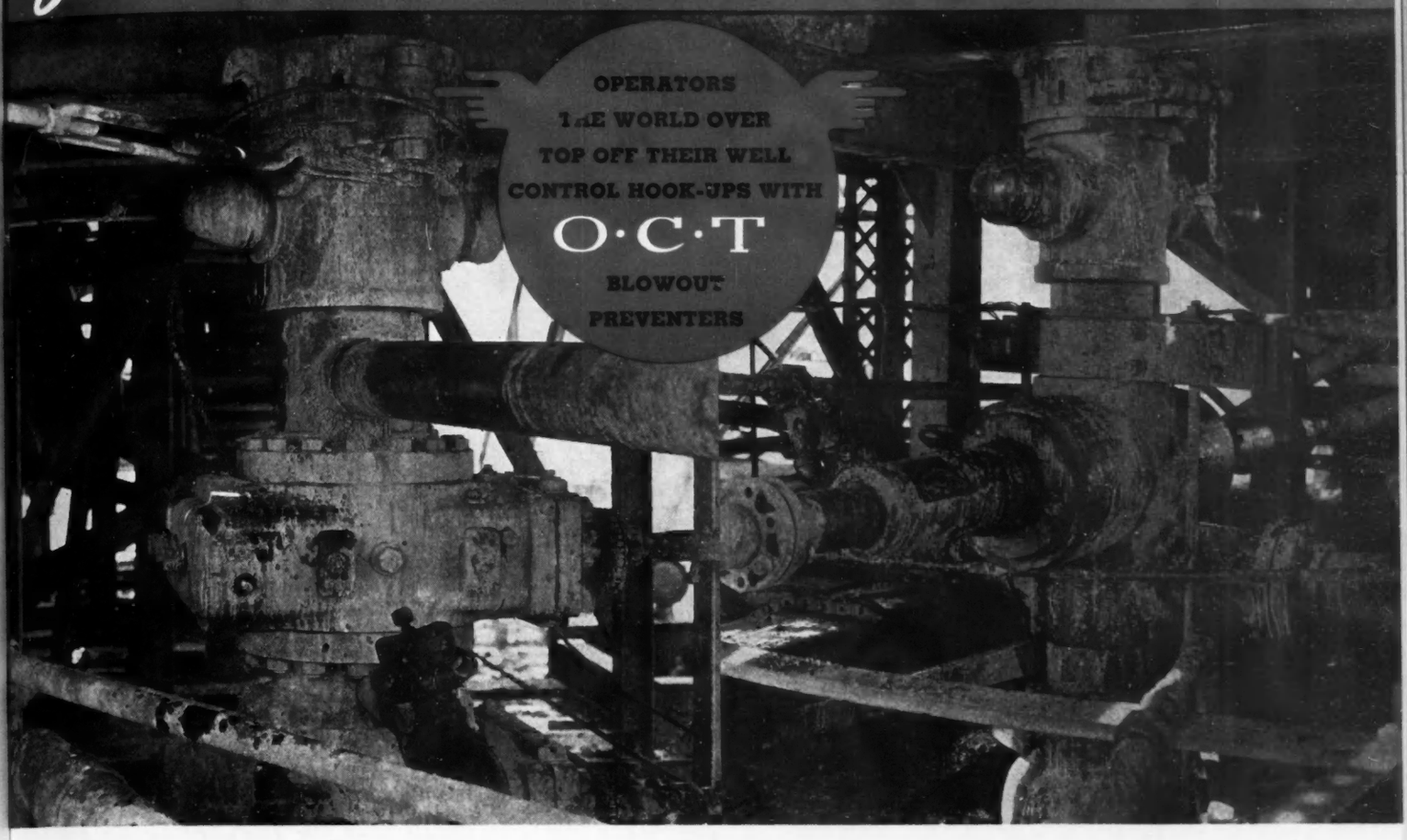
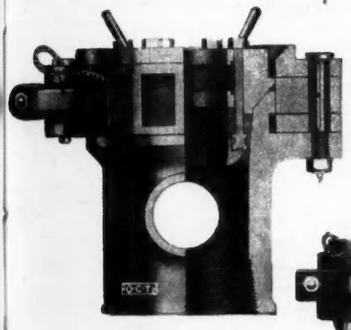
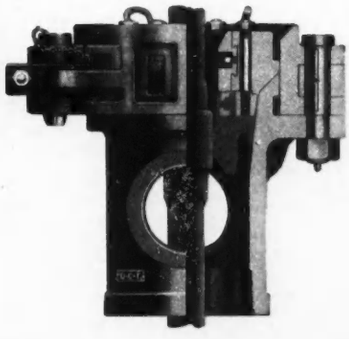




LEFT: Sectional view of an O-C-T type "D" Blowout Preventer equipped with regular packoff rubber, which permits rotating and raising and lowering of pipe the length of one joint.



RIGHT: Sectional view of an O-C-T type "D" Blowout Preventer equipped with stripper rubber, which passes pipe collars yet effectively seals in well pressures.

In most of the great oil fields of the World, where gas pressure is a menace, you'll see O-C-T Blowout Preventers at work. While some operators rely on them implicitly and independently to protect their well investments, others use them in conjunction with ram type Blowout Preventers as an added precaution and to absorb wear while rotating and moving pipe up and down to prevent sticking while killing the well.

O-C-T Blowout Preventers are available in all standard sizes to seal around drill pipe, tubing, or casing, and with either threaded or flanged bodies. Stripper rubbers, which pass pipe collars and tool joints, are available to fit all types O-C-T Preventers.

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tal Oil Company of Mexico, which had been in charge of Philip Messenger, manager in Mexico of subsidiaries of Continental Oil Company. Government agents took possession a few hours after a Monterrey court denied Messenger's petition for an injunction to prevent such action.

The second district federal court in Mexico City has refused to make permanent an injunction petition filed by two subsidiaries of Standard Oil Company of New Jersey, seeking to restrain expropriation of offices and properties of the companies along the Texas border.

Mexicans deny disturbing of American markets

Rafael Michel, consultant, and Rodolfo M. Fernandez, adviser, of the Mexican oil commission, of Mexico City, last week at San Antonio, Texas, denied that Mexican oil was disturbing United States markets. They declared that Mexico is exporting only about 10,000 barrels of oil daily to the United States, which they said was not enough to affect prices. Mexico also is exporting oil to Germany, France, England, Belgium, and South American countries, having exported altogether over 4,000,000 barrels since March, they added.

Questioning of the two men brought forth denials that Mexico was buying huge quantities of pipe in Germany and assertions that the Mexican oil commission has promised to buy oil equipment in the United States instead of in Europe.

Mexico charged with violating anti-dumping act

Cut price Mexican crude, produced from properties of American and British oil companies seized without payment by the Mexican government, is being illegally dumped upon the Texas oil market, and the North Texas Oil and Gas Association will push its formal complaint of violation of the federal anti-dumping act, it was declared in a formal statement issued by John Kilgore, of Wichita Falls, general counsel for the association. The act apparently violated is known as the federal anti-dumping act of 1921.

Kilgore, attending the Texas Mid-Continent Oil and Gas Association convention, challenged the accuracy of statements issued previously by Mexican sources which denied "dumping" had occurred. Kilgore stated considerably more than the 10,000 barrels of oil was coming into Houston daily from Mexico, and that Texas Railroad Commission records made the amount official.

"The announcement of the Mexican government that it had contracted to deliver a total of over 7,000,000 barrels of oil to a Houston refinery was unquestionably a factor in the recent oil price break in Texas, in the opinion of many informed Texas oil producers."

Companies lose first round in new Mexican battle

Oil companies lost the first battle in their new fight via administrative channels against expropriation, when Economy Minister Efren Buenrostro rejected their appeal from the decree. The economy minister had charge of oil affairs during the companies' regime.

The companies are to take the case to the lower courts and gradually again approach the supreme tribunal, which recently threw out their appeal on the ground that it was premature, because they had not exhausted all administrative avenues for redress.

Five firms seek to export natural gas to Mexico

Hearings on five applications by natural gas companies to export natural gas to Mexico were set last week by the federal power commission. The action is the first of its kind taken by the commission, and is authorized by the natural gas act which became law on June 21. Following are the hearings scheduled:

November 7—Hearing on application filed August 15, 1938, by United Gas Pipe Line Company, of Houston, Texas, for exportation from a plant near Roma, Starr County, Texas, for sale and delivery to Monterrey, Mexico.

November 7—Hearing on application filed August 30, 1938, by United Gas Corporation, of Houston, Texas, for exportation from its Laredo, Texas, system for transportation and sale to Nuevo Laredo, Tamaulipas, Mexico.

November 8—Hearing on application filed September 3, 1938, by El Paso Natural Gas Company to export from a point near Naco, Arizona, to Cananea, Mexico, natural gas used by Cananea Consolidated Copper Company at its smelter and mines and supplied to the town of Cananea.

November 8—Hearing on applications filed September 19, 1938, by Texas Cities Gas Company, of Dallas, Texas, and September 21, 1938, by El Paso Natural Gas Company, of El Paso, Texas, respectively, for exportation of natural gas from El Paso to Juarez, Mexico.

The commission will determine whether the proposed export of natural gas is in the public interest. Hearings will be held in the hearing room of the commission at Washington.

Canadian Fields

First strike for Saskatchewan Province looms during week . . . Turner Valley to repressure

A crude oil strike at Vera Oilfields, Ltd.'s 2, near Unity, Saskatchewan, highlighted West Canadian oil activity last week. On Legal Subdivision 5, Section 23, Township 41, 24-w3, it promises to be the first commercial crude oil well drilled in that province. Production estimates are set at 100 barrels a day from the Devonian lime.

The first oil show was obtained just above 2000 feet, a green oil of 30 gravity. A heavier flow was encountered at 2070 feet and casing was cemented. On deepening 3 feet, the flow became so heavy that it was impossible to continue drilling. Oil was reported 600 feet in the hole despite bailing. A swab was being rushed to the well site.

The strike is considered important in view of its shallow depth. Production in Turner Valley, the Dominion's sole major oil field, is from the Madison limestone between 6500 and 7500 feet. The unity structure is just east of the Alberta-Saskatchewan boundary.

The allowable production of the 59 Turner Valley crude producers was cut 7500 barrels daily, or one-third, last week by order of the Alberta Petroleum & Natural Gas Conservation Board. The production is being held to 14,500 barrels daily, compared to a possible maximum yield of 50,000 barrels.

Okalta Oils, Ltd.'s 6, Legal Subdivision 3, Section 30, Township 18, 2-w5, approximately 2 miles west of production on the southwest flank of Turner Valley, reported signs of considerable gas as it began deepening into the Madison limestone. There are no signs of water. Bottom is now at 10,020 feet, the deepest hole in the British Empire. Fair progress is being made in drilling and the outpost may be completed in another two weeks.

On the Calling Valley structure, paralleling Turner Valley to the east, Sentinel Oils, Ltd.'s wildcat on Legal Subdivision 15, Section 8, Township 20, 2-w5, was drilling at 7120 feet and believed near its objective. It is in a hard formation, using cable tools.

Draft plan for Turner Valley repressuring

A plan for repressuring gas in the Turner Valley field of Alberta, Canada, for return to the limestone was announced last week by the Alberta Petroleum Association. The project calls for construction of three compressors in the southern, central and northern areas of the field at a total cost of $1,837,000.

The plants would compress 90,000,000 cubic feet of gas per day after it has been processed to remove gasoline and return it into the limestone. Operating costs of the three units would be $98,987 per year. The project is now being studied by a re-pressuring committee of the association, comprised of Herbert Greenfield, chairman; J. G. Spratt and A. G. Graves. Recommendations will be made to the association.

The repressuring program is being investigated in view of the rapidly declining gas pressure in the Turner Valley field which, it is feared, will soon make artificial means of lifting gas to the surface necessary. Many of the wells drilled in Turner Valley are believed to be crooked, making operation of pumping equipment, if needed, difficult.

No provision is made in the proposed program for gas wells in the older north end of the field, which by an order of the Alberta Petroleum and Natural Gas Conservation Board are held to a total ouput of 1,200,000,000 cubic feet a month. They had previously been blowing wide open for naphtha.

Personal Glimpses and Notes From Here and There in Venezuela

By WM. V. GROSS, Foreign Editor The Oil Weekly

HOMER McDUFF of Caripito, general drilling superintendent of Eastern Venezuela for Standard Oil Company of Venezuela, raises orchids for a hobby. At a venison barbecue given by him in a clearing in the monte Sunday, October 16, he told this story. It seems a much sought after young lady in the camp planning to go to the Columbus Day tea dance at the Caripito club came to McDuff to obtain one of his orchids to wear. He gave her one with the advice:

"Now, young lady, don't you let that warehouseman Turner crush this orchid."

And she promptly retorted, "Don't you worry, Mr. McDuff. He won't crush this orchid. I'm going to wear it on top of my hair."

A. J. PROUDFIT, formerly of the Standard Oil Company of New Jersey's Argentinian and Lake Maracaibo districts' executive production personnel, recently was shifted to Caripito to relieve G. Moses Knebel, general manager of the East Venezuela division of Standard Oil Company of Venezuela, who is vacationing in Colorado and elsewhere in the States. Proudfit, who used to be a driller in Mexico, is well liked by the boys in the field.

W. I. CRUMP of Caripito, Venezuela, is acting as Quiriquire district superintendent for Standard Oil Company of Venezuela while Richard Kester is on vacation in the United States.

J. H. (PAT) MORRIS

J. H. (PAT) MORRIS of Caripito, chief of transportation of the Eastern division of Standard Oil Company of Venezuela, (a job which to a casual observer seems to be about the hardest and most grief-filled in all of the Americas), tells an interesting anecdote in connection with the non-technical problems of concession transportation. It seems that a payroll was headed into the wilds of Western Venezuela, near the Colombian border and in the territory of the savage Motilone Indians. The payroll pack train was hijacked by a tribe of Motilones and then chased on down the trail through the jungle. Returning later to inspect the robbery scene, the party found all the money neatly stacked in the trail. The Indians had coveted only the regulation canvas mail bag in which it was carried. In their eyes the money was worthless.

L. C. CADE, drilling foreman for Standard Oil Company of Venezuela at Quiriquire, is a difficult man to find and apparently an unknown one if the newcomer asks for him by that name. But if you ask for "Teelee" Cade, even the native who speaks only Spanish will brighten up with comprehension. Teelee got his nickname from the good old American game of teeleeing, or pitching for the line, and when it is a question of whether Teelee or another man should do this or that, such as running over to the club for cigarettes, Teelee always wants to teelee to see who'll make the trek.

FRED A. SUTTON, geologist who has won the sobriquet of globe trotter as a result of activities on behalf of Standard Oil Company of New Jersey interests in various foreign lands, landed in Caripito, Venezuela last week after looking over possibilities of the Gobi desert in Tibet. He traveled through China to seaboard. It is told that Sutton, who was active for years in Argentina, complained at 30 Rockefeller Plaza upon his return to New York that he was getting damned tired of this running around business and that he wanted to settle down to an office job for a while. "That's fine, Fred. We don't blame you a bit," they told him. "And we'll fix you up a nice desk and office—just as soon as you run down to Venezuela and get the geological set-up of all the fields and wildcat areas fixed in your mind." Hope you enjoy the next two Venezuelan Christmases, Fred.

More than 90 percent of the all-weather road mileage in Eastern Venezuela has been built by oil companies. Pictured is a section of the main road built by Standard Oil Company of Venezuela from Caripito to Quiriquire, 27 kilometers.

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MEN IN THE INDUSTRY'S NEWS

REESE H. TAYLOR BECOMES PRESIDENT OF UNION OIL COMPANY AS L. P. ST. CLAIR HEADS DIRECTORY BOARD

Art Strieb

REESE H. TAYLOR

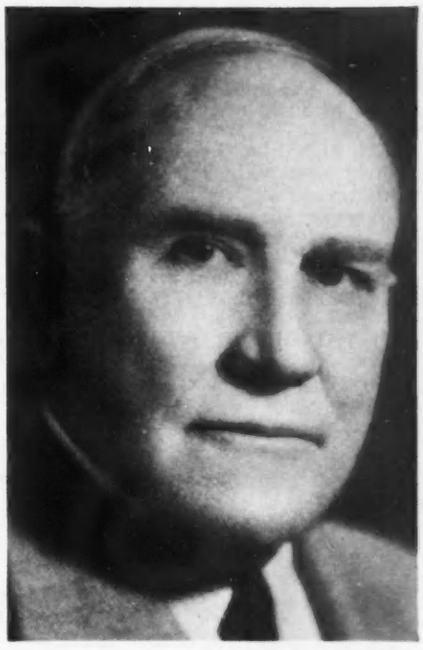
ST. CLAIR, WHO HAD BEEN WITH FIRM SINCE 1909, HAD HOPED TO RETIRE

ONE day last week L. P. St. Clair retired as president of Union Oil Company and Reese H. Taylor moved into the position.

Settling back in the president's chair, which he had occupied since 1930, St. Clair asked to be relieved of his duties. However, he was elected chairman of the board of directors, and in that capacity will continue to take a part in the affairs of Union Oil Company.

St. Clair joined Union Oil Company in 1909. He was made a director of the company in 1920, a vice president in 1922, and became the concern's fifth president following the death of W. L. Stewart in 1930. As one of the organizers of the Independent Oil Producers Agency in the San Joaquin Valley, and of which he has been president for 31 years, St. Clair fought for the independent operator and assisted in getting many changes in the petroleum industry. He helped to organize the American Petroleum Institute, and acted as vice president at large for several years.

The new president, Reese H. Taylor, was elected to the board of directors of Union Oil Company in 1937. He has had varied experience with other business firms. He is president of Consolidated Steel Corporation, Ltd., also a director of Pacific Finance Company, Douglas Aircraft Corporation, Pacific Indemnity Company and Gladding McBean & Company. At present he is a director of the Federal Reserve Bank of San Francisco.



Greystone Studio

L. P. St. CLAIR

F. R. S. HENSON, senior subsurface geologist of Iraq Petroleum Company, Ltd., has returned to Kirkuk, Iraq, after a five months vacation in England.

PAUL GRIFFIN, H. P. Hellinghausen and F. E. Warterfield, Oklahoma Pipe Line Company, have received promotions. Griffin becomes vice-president and treasurer, Hellinghausen is Griffin's assistant, while Warterfield will take over the duties of purchasing agent in addition to those of chief engineer.

T. C. HALLER, Sun Oil Company purchasing agent at Tulsa, is transferred to the firm's office at Evansville, Indiana, where he will serve in the same capacity. R. R. Burris, previously Haller's assistant, becomes purchasing agent in the Tulsa office.

CECIL HAGEN, geologist, with Superior Oil Company, Houston, was the principal speaker at the weekly meeting of the Houston Geological Society at 910 Texas Avenue, October 27. His subject was "The Geology of the West Flank of the Jennings Oil Field, Acadia Parish, Louisiana".

CLAUDE "RED" FUNK, former production foreman for Pure Oil Company in the Noble district of Richland County, Illinois, has been transferred to the new Cisne district in that state. Lee Haine, Noble district superintendent who had been acting Cisne superintendent has returned to Noble.

J. ED. ERWIN, secretary-treasurer of the North Texas Oil & Gas Association, Wichita Falls, will terminate four years of service with the body effective November 1 to become a member of the research staff of the Texas Division of the Mid-Continent Oil & Gas Association, Dallas. Erwin will be succeeded by Dave G. Gray, Wichita Falls, who is an authority on the producing, transportation and refining phases of the oil industry.

J. H. PRESSLEY, superintendent of the land and geological departments of Sun Oil Company in the Dallas division, is vacationing in Florida.

W. F. KNODE, chairman of the Alberta Petroleum & Natural Gas Conservation Board, returned to Calgary last week following a three weeks' trip to Texas.

J. C. KING, Charleston, was named president of the West Virginia Petroleum Association last week by the organization's executive and general committees. He succeeds W. A. Jackley, Parkersburg, manager of South Penn Oil Company, who served during the past two years. Other officers named are J. E. Jones, Parkersburg, vice president, and Edwin F. Patrick, Parkersburg, re-elected secretary.

PAUL DEAN is in charge of a new western division established at Owensboro, Kentucky, by Ohio Oil Company.

JAMES C. ELLIS, independent active in Illinois, Indiana and Kentucky fields, has returned from a vacation in New Orleans.

KENT RIDLEY, JR., of the land department of Shell Petroleum Corporation at Houston, has been transferred to the company's district office at Baton Rouge, Louisiana.

ROBERT L. HAGUE, New York, general manager of the marine department of Standard Oil Company of New Jersey, was named last week by Governor Herbert H. Lehman to the board of visitors of the New York Merchant Marine Academy.

G. W. JOHNSON. G. Johnson and K. Anderson last week organized Signal Hill Oil Corporation of Illinois. The company will maintain headquarters in Centralia.

STEVE REDFERN, McPherson, Kansas, is president of a new organization embracing safety instructors in the petroleum, mining and allied industries which was organized recently with the McPherson chapter as charter chapter. Other officers are L. E. James, Chase, first vice president; Leo Reed, Lyons, second vice pres-

ident; Cecil Jones, McPherson, third vice president; Harold Moore, McPherson, secretary-treasurer, and E. E. Gibson, Chase, chairman of the executive board.

CARL MAXEY, geologist for Kingwood Oil Company, narrowly escaped death last week from carbon monoxide gas fumes when he went to sleep in his car with the motor running at a well site in the Salem field, Marion County, Illinois. A driller, who tried to arouse him, rushed him to St. Mary's Hospital in Centralia.

H. M. RUSSELL, Sinclair Prairie Oil Company geophysicist, recently returned from a trip to the company's properties in Wyoming.

A. M. WRIGHT, land man for Sunray Oil Company of Illinois, was a recent visitor at the home office in Tulsa.

P. J. HOAGLAND, purchasing agent for Warren Petroleum Corporation, Tulsa, is back at his desk after vacation.

DR. T. B. WILLIAMS, consulting geologist, last week discussed "Potential Alberta Oil Structures" before the Calgary Board of Trade.

H. F. DAVIES, of the Denver production office of The California Company, was in Calgary last week to look over southern Alberta oil fields. He met with John Galloway, who is in charge of the company's operations in the West Canadian province.

E. R. RICE, vice president of Pacific-Mid-Continent Corporation, has returned to headquarters at Los Angeles after witnessing the completion of the company's wildcat gasser in Reeves County section of West Texas.

ADAM KURTZ, secretary and treasurer of Michigan Consolidated Gas Company, has been elected vice president.

B. W. SNYDER, secretary of the Calgary (Alberta) branch of the Engineering Institute of Canada, discussed "The Operation of Calgary's Natural Gas System" before a meeting of the organization last week.

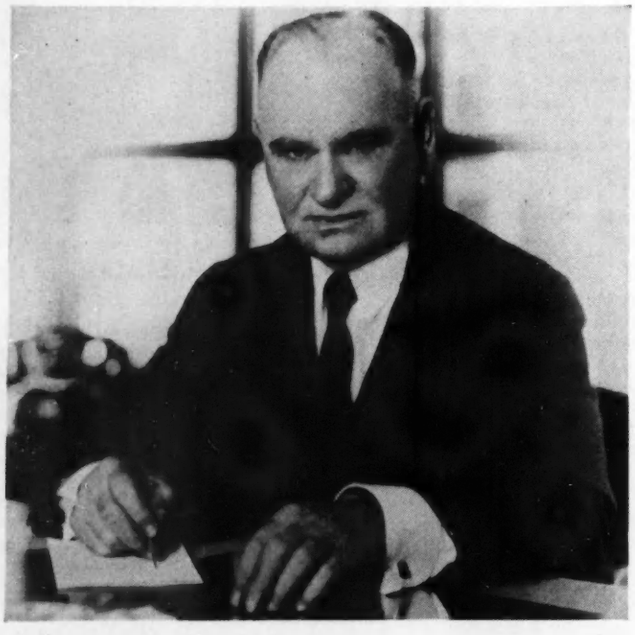
WALTER TROUT, Fort Worth, Texas, and M. P. Matheny and L. F. Wall, both of El Dorado, Arkansas, last week organized the Petroleum Export Company as an Arkansas corporation. Headquarters will be maintained at El Dorado.

W. A. GOFORTH IS ELECTED PRESIDENT OF NEWLY ORGANIZED OKLAHOMA STRIPPER WELL ASSOCIATION

»

HE GAVE UP THE BANKING BUSINESS FOR OIL GAME WHEN APPOINTED RECEIVER FOR PETROLEUM FIRM

»



W. A. GOFORTH

WHEN the Oklahoma Stripper Well Asociation was organized on October 19, members elected W. A. Goforth, of Tulsa, as its first president. After having engaged in the mercantile and banking business for 25 years, Goforth received his first close contact with the oil business when appointed receiver for Meridan Petroleum Corporation. He acted as receiver for the concern from 1922 to 1925, when he organized Valley Osage Oil Company, and has been its president ever since. The company owns producing properties in Oklahoma and Texas.

Other officers of the Oklahoma Stripper Well Association are: Charles F. Clowe, Ardmore, vice president; John H. Rebold, Okmulgee, vice president; Carl Haun, Blackwell, vice president; and Howard Whitehill, Tulsa, treasurer.

JOSEPH W. NICHOLSON, president of National Association of Purchasing Agents and director of purchases for the City of Milwaukee, spoke before the sixth annual meeting of the organization held at Tulsa last week.

J. I. WHEELER, in charge of warehouses for Shell Petroleum Corporation at St. Louis has been visiting the Tulsa offices.

EDWARD V. O'ROURKE, who has been with Phillips Petroleum Company, Oklahoma City, for the past summer, has returned to Ohio State University where he is associate professor of mining and petroleum engineering.

W. H. BRATCHES who has been purchasing agent for Shell Petroleum Corporation at Tulsa, has been transferred to the San Francisco office. He will be succeeded at the Tulsa office by his assistant, G. C. McLaron.

COL. R. E. DALTON, of Dalton Development Company, was in Evansville, Indiana, last week while touring tri-state fields. Formerly operating in Oklahoma, Dalton is now active in the new Centralia pool of Marion County, Illinois.

FRANK WEBSTER, president, heads directors of Highwood-Sarcee Oils, Ltd., Alberta development company, named when shareholders held their annual meeting in Calgary last week. Membership of the board was reduced from nine to five members. Other directors are William Ackland, P. J. Timms, T. O. Renner and R. G. Stracker.

E. E. ROSAIRE, Houston, a past president of the Society of Exploration Geophysicists. addressed a meeting of the Kansas Geological Society at Wichita last week.

JOHN MULLIGAN, scout for Magnolia Petroleum Company in the Wichita Falls district, has been transferred to southern Illinois. He will make his headquarters in Mattoon.

J. W. (DEAK) PEARSON, of San Antonio, Texas, was touring fields in the tri-state area of Illinois, Kentucky and Indiana last week.

DR. J. W. STOVALL, of the University of Oklahoma, discussed "The Character and Origin of the Dakota Sandstone," last week before members of the Shawnee Geological Society, Shawnee, Oklahoma.

EUGENE ROSSI, William C. Brady and Tariton Stafford last week organized the Rossi Drilling Company as a Texas corporation. Headquarters will be maintained in Corpus Christi.

H. A. SELLIN, geologist for Magnolia Petroleum Company, was in Henderson last week looking over new West Kentucky development.

DIED:

VEAN T. SIBERT died at his home in Clarksville, Ark., August 8, following a short illness. Sibert was field superintendent for Arkansas Louisiana Gas Company for 17 years. The body was taken to a former home, Mendon, Ohio, for burial.

HERBERT H. GEDDES, 60, superintendent of oil properties for L. E. Mallory & Sons for the past 30 years, died October 20 of a heart attack at his home at Kinzua, Pennsylvania.

DOCK PRICE, foreman of a pipe line construction crew working in the Vacuum oil field, 16 miles southwest of Lovington, New Mexico, was instantly killed October 22 in the explosion of two boxes of dynamite.

THE WEEK'S NEWS SUMMARIZED

Situation

The control situation continued to be of foremost importance in the oil industry last week. While study continued of the proposal that the Interstate Oil Compact be extended to include control of refinery operations as well as production, definite encouragement came in the form of strict allowables established by different states.

At Fort Worth, the Western Petroleum Refiners Association gave tenative approval to the enlargement of the Interstate Oil Compact so refinery operations could be included. A committee was appointed to join a similar group to be designated by the Independent Petroleum Association, the purpose of which would be to study the plan and to submit findings to the compact commission.

From Oklahoma's governor came the suggestion that the Connally hot oil act be extended so that it would prohibit the shipment of any oil in interstate commerce that had been produced in excess of state allowables.

It appears that November production will be under strict control, despite recent threats that allowables might be loosened.

Texas will continue both Sunday and Saturday shutdowns of all its fields. Under the new order, although output will be approximately 35,000 barrels higher than in October, production will be about 90,000 barrels below the Bureau of Mines estimate for Texas demand.

Particularly encouraging was the cooperation of Louisiana, which cut its allowable 25,000 barrels to 235,500 barrels.

Other states are expected to continue in force practically the same allowables that were in existence during the past month.

It was predicted last week that another attempt would be made to enact an oil control measure in Michigan, which state has been coming to the foreground in developments and production.

Markets

Price changes last week were confined largely to the gasoline market, tank car prices of that product in the Mid-Continent having declined further. The crude oil market was fairly stable, with just a few minor adjustments in local regions to meet prices posted previously by other concerns.

Tank car quotations on 63-66 octane gasoline in the Oklahoma market were off another ⅛ cent a gallon, and prices in the Chicago region were down a similar amount.

Stocks

Latest weekly statistics reflected further satisfactory operations and a favorable inventory situation. Crude runs to stills declined sharply, dropping from 3,310,000 barrels the preceding week to 3,230,000 barrels. At this level they were 4½ percent below the level of a year ago. Curtailment of refinery runs permitted withdrawal of about 700,000 barrels of gasoline from storage during the week ended October 22. This brought gasoline in storage to a level but 1.7 percent greater than one year ago.

Crude stocks were further reduced by 2,000,000 barrels. However, gas and fuel oil stocks rose 150,000 barrels to another new all-time high.

Courts

Two St. Paul jobbing concerns last week filed suit against Phillips Petroleum Company for nearly half a million dollars damages on the charge that it conspired with other firms to fix wholesale gasoline prices in Wisconsin. The case is an echo of the federal government's prosecution of major oil companies in the now famous "Madison trust trial," and may be the forerunner of a number of similar suits, particularly if the plaintiff in this instance is successful.

Meanwhile, a mandamus action filed by the department of justice against the judge who presided at the trust trial was continued by the court of appeals until November 7. The action directs the Madison jurist to show why his dismissal of one oil company and 10 officials after a jury had found them guilty should not be vacated.

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Oil in the Courts

Wisconsin jobber seeks large damages for alleged price fixing by group of Madison trust defendants ... Delay rule on mandamus action in trust suit

Jobbers seek damages for alleged trust violations

Echoes of the federal government's prosecution of major oil companies at Madison, Wisconsin, for alleged market rigging were heard in St. Paul, Minnesota, last week when Clark Oil Company and Plymouth Clark Oil Company, jobbing firms operating in Wisconsin, filed a $435,585.26 suit against Phillips Petroleum Company charging conspiracy to fix wholesale gasoline prices in Wisconsin.

Named as co-conspirators, but not as defendants, were The Pure Oil Company, Standard Oil Company of Indiana, Sinclair Refining Company, Shell Petroleum Company, Socony-Vacuum Oil Company, Inc., Skelly Oil Company, Cities Service Oil Company, the Chicago Journal of Commerce and Platt's Oilgram.

The companies, according to the complaint, conspired to fix prices by basing their prices of spot tank car gasoline "ostensibly on the average daily quotations shown in said publications." The quotations, it is charged, "merely reflected the prices fixed by the unlawful acts of the defendant and its co-conspirators."

The suit is patterned after the federal government's criminal prosecution in Madison last winter, which resulted in a jury verdict against 16 major companies and 30 individuals on similar charges. Following the verdict, the Madison court granted dismissal motions filed on behalf of one company and 10 individuals, granted new trials to 3 companies and 15 individuals and sustained the verdict against 12 companies and 5 individuals. Parts of the ruling are before the circuit court of appeals in Chicago. The Phillips company was one of those against whom the jury decision was allowed to stand. An appeal has been taken from the court's fine of $5000 levied on the company.

May Be First of Many

The suit filed at St. Paul last week is the first of many which may be filed by jobbing firms in 10 mid-western states seeking alleged damages suffered as a result of the actions of major companies. Filing of similar suits, however, will probably be withheld pending disposition of the first case.

LATE WAGE-HOUR FLASH

Members of the petroleum industry seeking ruling from the Wage-Hour Administration as to their status under the new labor standards act will get little immediate help from Washington because of restrictions in the law which preclude the administrator from making legally binding definitions which will confer upon employers immunity from suits for unpaid minimum wages or overtime compensation which may be filed by employees.

Industrial representatives who have conferred with administration officials find that the latter are confining themselves to the expression of general views only, and the only definite pronouncements thus far issued deal with the definition of executives and other exempted employees and with such matters as the type of records to be kept.

Because of the fact that the law is so written as to apply to workers not only in establishments engaged in interstate commerce but also in the production of goods which will move in interstate trade, the actual scope of the act can be defined only by a Supreme Court decision as to what constitutes interstate commerce.

Among the questions presented to the administration is that of the status of an independent producer selling his entire output at the well head. Unofficially, the view has been expressed that he is not engaged in interstate commerce and would not come under the law, but at the same time, it was pointed out, there might be factors which nullified that presumption and brought him within the purview of the statute.

Committees are to be appointed as quickly as possible to consider and recommend the highest minimum wage which their industry can pay pending application of the 40 cent rate. Each major industry will eventually have such a committee. Recommendations made during the first year must not be below 25 cents and in subsequent years not below 30 cents an hour; but no recommendation in excess of 40 cents an hour can be submitted. The committees' work will be confined to this one feature and they will have no authority to go into any other phase of the law.

In cases where employers violate the act, employees may bring suits for unpaid minimum wages or overtime compensation, and employers are liable for unpaid sums plus an equal amount as damages, court costs and attorneys' fees, and the federal government may prosecute criminally. The penalty for violation is a fine of not more than $10,000 or imprisonment for not more than six months but imprisonment may be imposed only for a second or subsequent conviction.

An important provision of the law holds that the federal act shall not excuse failure to comply with any other federal or state law fixing higher minimum wages or shorter maximum hours.

So far as the oil industry is concerned, the production branch, refining and transportation branches generally appear to come under the act, but filling stations probably will be exempt as local service operations. Definite classification, however, is dependent upon court decisions should it be involved in any litigation.

[*See article page 25*]

Trust trial mandamus action is postponed

A mandamus action filed by the department of justice against Federal Judge Patrick T. Stone, of Madison, Wisconsin, was continued last week by the United States circuit court of appeals at Chicago to November 7.

The action directs the Madison jurist, who presided at the oil anti-trust conspiracy trial last winter, to show why his dismissal of one major oil company and ten oil company officials after a trial jury found them guilty should not be vacated.

Should the appeals court over-ride Judge Stone's order, the 11 defendants would be retried along with three companies and 15 individuals whose motions for a new trial were granted after the jury verdict of guilty. Federal Judge Walter C. Lindley, of Danville, Illinois, who will preside over the retrial, has tentatively set May 8, 1939, as trial date.

Supreme Court upholds Texas confiscation law

The Texas Supreme Court last week handed down a decision in the Skipper-Bivens tender suit, which in effect sustains the validity of the statute authorizing confiscation and auction of oil produced in excess of Railroad Commission allowables.

The court effected this result by refusing an application for writ of error. By this action, the court adopted the opinion written by the 3rd Court of Civil Appeals in March of this year. This is the first case involving the validity of the confiscation law that has been acted on by the Supreme Court.

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EDITORIAL COMMENT

Sober Thinking Needed

By RAY L. DUDLEY

THE recent price cuts have left such a trail of bitterness, have caused so much discussion and dissension, that the oil industry finds itself in a position where ill-advised action on the part of a few men could easily precipitate a condition from which the industry would never recover.

The thought on the part of some, expressed in wires to Washington, that "federal control would be better than what we now have," while it unquestionably does not begin to represent the feeling of the industry as a whole, is packed with dynamite.

If such men will think the matter through, they cannot but reach the conclusion that federal control ultimately would destroy the independence of thought and action which has enabled hundreds and even thousands of independent operators to attain a degree of success envied on the part of those not in the industry.

The thought expressed by an executive of a large Mid-Continent oil company, that a "modified form of federal control would be advisable" fails to take into consideration the old adage that there is no such thing as a semi-virgin.

The idea that refinery runs can be controlled by the various states fails to take into consideration that the basis of prevention of physical waste is the foundation of production proration legislation, even in those states which also have included in their statutes consideration of market demand. It points to price fixing, and even if it could be accomplished through state legislation it is a step fraught with danger.

This is a time for sober thinking.

It is a time to "count ten" before doing anything drastic.

That there is a great deal of deep, sober thinking going on is evident. That there is a disposition on the part of the independent industry's leaders to counsel against radical action was proven at the I. P. A. meeting at Tulsa last week. That meeting showed leadership of the highest quality, and the subsequent action of the Texas Railroad Commission in refusing to lift the Saturday and Sunday shutdowns in November also showed a conservatism which we believe will pay real dividends to the oil industry.

It requires real courage to take it on the chin when there is a sincere doubt on the part of the "taker" as to whether or not the blow is justified. But we believe that a policy of taking no action until such action is dictated by sober thought instead of resentment is sound.

Among the things which might well receive some thinking at this point is that of how allowables are being fixed for the various states. The present method leaves a great deal to be desired and unquestionably a better method could be developed with proper study. At present a state fights its way to its allowable—the Bureau of Mines recommendations being made on the basis of past positions of the various states, rather than through a study of what might be the fair share of each state. How to determine the fair share is, of course, not an easy task. The present allowables of the various states, the needs of the states, these and many other factors make the effort to reach a fair compromise most difficult. But certainly a plan which is based upon the "hardness" of one state and the timidity or forbearance of other states doesn't seem to be fair. There must be a fair way of determining allocations—unless the law of supply and demand is to be allowed full and complete sway.

As we see it, the oil industry has before it several roads it may take or be forced to take. Among those we see are:

It may take, willingly or unwillingly the road to federal control—as a public utility, with its operations and its profits regulated—but not guaranteed. The railroads afford an example of the end of this road.

It may lift all restrictions of proration except those dealing solely with conservation—in which event a penalty of ruin for some will be paid. Under such a plan a state which would compete on quantity of oil produced would also understand fully that it would be competing in lowering the price of the oil produced.

A third road might be a more equitable administration of the plan under which we are now working, with each state making its allocations on a plan which would be fair to all. The third plan might easily fail to work unless the federal government took a greater hand in the matter. It might work if each state felt that its position from month to month or quarter to quarter were based upon something to which it had previously agreed was fair.

We should like to see a study made on the third idea—but if it leads to federal control we would favor a return to proration on a basis of conservation and conservation only.

These are not necessarily the only roads, we think. To hear some of our friends talk one would think that there had never been a price cut before. We have seen the price of oil go up to $3.50 per barrel—but it has always come down! We have seen it drop to 25 cents per barrel, but it has always gone up!

Probably the thing which makes the difference right now is the sincere effort made by the producers in some states to meet all proration requirements—even though they hurt badly—in return for stabilization which they have now lost. That is the thought we hear expressed most frequently—"We have paid for stabilization through proration—and we aren't getting what we have paid for."

Control Picture

Western refiners tentatively approve of interstate compact control . . . Texas continues Saturday and Sunday closings . . . Louisiana cuts output.

Refiners study proposal for control by compact

The regulation of crude runs to refineries under proposed enlarged powers of the Interstate Oil Compact was given tentative approval by members of the Western Petroleum Refiners Association at Fort Worth on October 26. A committee was appointed to join a similar body to be designated by the Independent Petroleum Association of America in making a study of the plan and to determine if the independent refiner will derive benefit by the apportioning of plant operations between states. The finders of this joint committee will be submitted to the compact group, according to C. M. Boggs, Kanotex Refining Company, Arkansas City, Kansas, president of the refining association.

Inclusion of refiners under the Interstate Oil Compact as a measure to prevent excessive plant operation and the accumulation of surplus stocks of refined products was recently suggested by President Roosevelt during a conference held with Colonel E. O. Thompson, chairman of the Texas Railroad Commission and the compact. The attitude of the President towards such a plan for stabilizing the refining industry in states belonging to the compact was revealed by Chairman Thompson October 20 at the Tulsa convention of the Independent Petroleum Association of America.

Colonel Thompson reviewed the President's remarks before the Fort Worth gathering of refiners, and expressed belief that the duties of the compact could be expanded to accomplish orderly crude runs to stills on the same basis that oil production has been curbed successfully to prevent physical waste. He added that if compact member states would enact laws to include refineries that the national Congress would be asked to pass supporting statutes by President Roosevelt.

Charles Roeser, president of the Independent Petroleum Association, stated that the producing branch of the industry has made a success of balancing supply with demand under the guidance of the compact. He expressed belief that similar benefits would accrue to the refiners if the compact plan was adopted.

Refiners can't meet and reach agreements on the volume of oil throughout required for a stable market, according to Roy Jones, president of the Panhandle Refining Company, Wichita Falls. He is the oldest refiner in North Texas from standpoint of continuous operation. We need state regulation of refiners as well as production, he added.

A. L. Derby, Derby Oil Company, Wichita, Kansas, was doubtful of the success of the plan.

The refining association's committee, which comprises one representative from its 7 membership districts, follows: T. M. Martin, Lion Oil Refining Company, El Dorado, Ark.; H. B. Gray, Atlas Pipe Line Company, Shreveport, La.; M. J. Grogan, Hurricane Petroleum Corporation, Arp, Texas; Roy B. Jones, Panhandle Refining Company, Wichita Falls; D. W. Hovey, Republic Oil Refining Company, Houston; Rex H. Winget, Cushing Oil Refining Company, Cushing, Okla.; and A. L. Derby, Derby Oil Company, Wichita, Kansas.

Marland would extend Connally act provisions

Governor E. W. Marland of Oklahoma has recommended amending the Connally "hot-oil" act to prohibit interstate transfer or shipment of crude oil produced in excess of amounts fixed by a federal administrator. Governor Marland expressed doubt that a prosal made at the recent Independent Petroleum Association at Tulsa, resulting from a conference between President Roosevelt and Colonel E. O. Thompson of Texas to bring refining under the compact would lead to satisfactory regulation. He further added that other states, not members of the compact and without conservation laws having to do with control of the production of crude lessened the value of compact control by being non-members.

Texas continues Saturday and Sunday shutdowns

The Texas Railroad Commission last week issued its November proration order, which provided for continuation of the shutdown program. All three Commissioners signed the order, which provided for closing the fields on Saturday and Sunday during each weekend in November.

There was no change from allowables contained in the October order, except that additional allowances made to newly completed wells provided for some increase. The commission estimated that the allowable on November 1 would be approximately 1,709,272 barrels, but that shutdown reductions would bring the daily average to approximately 1,279,653 barrels.

During the first 15 days of October, the daily allowable averaged 1,241,066 barrels, based on an order providing for 1,708,804 barrels as of October 15.

The new allowable is approximately 90,000 barrels daily less than the estimated consumer demand for Texas oil of 1,371,000 barrels, recommended by the United States Bureau of Mines.

After the order was issued, Commissioner Lon Smith indicated that he expected that December would see fewer shutdowns. Commissioner Thompson, however, said that any prediction would be decidedly premature and that the commission could make no estimate of probable trends.

Refinery Assistance Asked.

Thompson demanded that refiners aid in stabilizing the industry. In a prepared statement he said,

"In the old days of the kerosene lamp it was the demand for kerosene that made the crude oil demand.

"Today the controlling factor in crude oil is the demand for gasoline.

"While crude oil stocks in storage above ground are at 278 million barrels, and this figure is the low for sixteen years and five months, still we must keep in mind the fact that gasoline stocks control crude demand largely.

"Gasoline and fuel oil stocks are high.

"Gasoline stocks stood on October 15, at 68,426,000 barrels, which is 4 per cent above last year same date.

"Fuel oil stocks same date stood at 152,648,000, which was 28 per cent above October 15 last year, and is also the all-time high or peak on fuel oil stocks.

"This situation is working itself out. It would help greatly if refiners would cut their runs to stills fifteen per cent and work off gasoline and fuel oil stocks, or rather work them down by drawing on stocks instead of continually refining more and more unneeded gasoline. This can easily be done during the fall and winter months.

"A little showing of business statesmanship at this time among the refiners would be most heartening.

"The regulatory authorities who con-

Comparison of Texas Allowables by Districts

	DISTRICT	October 1	November 1	Increase	Decrease
6	East Texas	517,816	519,985	2,169	.....
10	Panhandle	81,143	81,751	608	.....
10	Moore County	1,529	1,529	.....	.....
10	Osborne Area	620	620	.....	.....
9	North Texas	66,554	60,518	.....	6,036
9	Foard County	688	688	.....	.....
9	K. M. A.	22,344	23,603	1,259	.....
9	Gant	340	340	.....	.....
7 & 7-C	West Central Texas	80,691	81,700	739	.....
8	West Texas	236,484	244,866	8,382	.....
5 & 6	East Central Texas	112,993	113,198	205	.....
1, 2 & 4	Southwest Texas	301,607	305,164	3,557	.....
3	Gulf Coast	264,810	275,310	10,500	.....
		1,687,619	1,709,272	21,653	6,036

trol crude oil production in the sovereign states have done a workmanlike job. All agree on this.

"Now is it not fair and square to call upon the unregulated business of refining to tote fair and promptly reduce their runs to stills by fifteen percent."

Louisiana allowable cut 25,000 barrels per day

The November allowable for Louisiana was set at 235,500 barrels by the Louisiana Conservation Commission. The October allowable was 260,470 barrels. The bulk of the reduction was in South Louisiana fields but North Louisiana areas were also cut. Under the November allowable South Louisiana is given 175,150 barrels and North Louisiana 60,350 barrels. North Louisiana fields were given the following allowables for November: Cotton Valley, 4750 barrels, reduced 2000 barrels; Lisbon, 6000 barrels, unchanged; Rodessa 31,000 barrels, reduced 4000 barrels; Shreveport (new field), 600 barrels; others, 18,000 barrels, reduced 2000 barrels.

Arkansas November allowable 52,000 barrels

A. M. Crowell, chief conservation agent, Arkansas Board of Conservation, last week announced the allowable for Arkansas in November will be 52,000 barrels, including oil from old unrestricted fields and prorated fields.

The Miller County end of Rodessa was given a November allowable of 5974 barrels, including 4350 barrels from the lower Gloyd, an increase of 1053 barrels, and 1624 barrels for the upper Gloyd.

The 95 Jones sand (lower Marine) oil wells at Schuler were given 15,000 barrels daily, a 1000-barrel reduction for that horizon from October. The Permian lime's five wells at Schuler were left unchanged at 1000 barrels, and no change was made in Buckner, Magnolia or Village, where wells are allowed 200 barrels daily each top allowable.

The Jones sand wells in Schuler and the wells in Miller County were not all shut in for bottom-hole pressure tests from October 20-27 as first announced but such data were taken by the conservation agents in those fields only from "key" wells.

Oklahoma likely to keep same allowable

A November allowable of 428,000 barrels daily has been recommended to the Oklahoma State Corporation Commission by Wm. J. Armstrong, Umpire. This allowable is the same as that established for October. Present daily production of the state exceeds the established allowable, being slightly in excess of 450,000 barrels. A number of areas are to cut back production, Burbank (South) will go to 8763 barrels, a 1000-barrel drop, while other fields will likewise be retarded. The Wilcox zone of Oklahoma City field will be allowed 76,100 barrels daily.

Texas to study refinery situation at next hearing

The Texas Railroad Commission has scheduled for November 18 its next statewide proration hearing. Besides the usual matters included in commission calls, the commission added these paragraphs:

"It is further ordered that at said hearing the commission will hear evidence for the purpose of determining whether or not it is possible for the operators of refineries and natural gasoline plants in the state to make accurate reports to the commission, and for the commission to make accurate checks of the operations in such refineries and natural gasoline plants with the equipment which is now installed and available in such plants, and

"Whether or not additional tanks should be installed for measuring all crude oil and other petroleum products taken into said refineries and all finished products of said refineries, and

"Whether or not additional meters should be installed for the purpose of determining the volume of gas taken into the natural gasoline plants, and

"Whether or not additional tanks should be provided for measuriig the gasoline produced in said natural gasoline plants."

Special allowables opposed by Kansas association

Kansas Independent Oil and Gas Association, meeting at Wichita late in the week, went on record as disapproving any special allowables over and above the decline curve adopted by the state commission early in the summer. Some 12,000 barrels of crude are being produced daily in Kansas in excess of normal allowables. It is considered that either the continuation of this practice or the granting of other special allowables might result in selective purchasing and an unstable price structure.

The November allowable order has been taken under advisement and the commission is continuing hearings into the matter of special allowables this week.

Another attempt to get Michigan oil act expected

P. J. Hoffmaster, Michigan conservation director, predicted at Lansing last week that oil industry leaders will attempt again to have the legislature enact an "oil control" measure at the session which opens in January.

The Oil & Gas Association of Michigan sponsored such a measure in the 1937 session which would have authorized state regulation of drilling and production. Its defeat was caused, primarily, by protests of independent operators.

There are now approximately 2100 oil wells in Michigan, Hoffmaster said, and the 1938 take from these wells is estimated at 19,000,000 barrels.

California allowable unchanged for November

For the fifth consecutive month, the Central Committee of California Oil Producers voted to retain the current monthly crude allowable of 610,000 barrels and a tolerance of 5000 barrels daily, the last to care for new production, when it met to set the quota for November. The average daily production for the state to date was placed at 668,000 barrels, but with the Lakeview operators in the San Joaquin valley adding two days extra to their voluntary shutdown period, this is expected to bring the average down to the daily level established for July, which was 659,000 barrels. No great demand for crude, over that at present, is expected until May, and it is believed that the current quota may be continued until late next spring.

Market Situation

New allowables improve market outlook . . . Both gasoline and crude stocks reduced . . . Refiners curtail runs . . . Another gasoline posting drop.

Market outlook improved by allowable schedules

The oil industry's market outlook has been materially improved in the past week, through the announcements of strict crude production allowables for November.

The new proration orders have dissipated the fears that production might be allowed to get seriously out of line with market demand.

The national production is due to be held down tightly, inasmuch as Texas will have both Saturday and Sunday shutdowns again throughout November, while Louisiana will cut production 25,000 barrels daily on November 1, and Oklahoma will retain October allowables in November, thereby staying far below current market demand. The other leading producing states similarly will cooperate in regulating the crude output.

Following the recent widespread crude price reductions, the crude markets gradually have become steady, and no more price changes appear in prospect.

Some anxiety is felt in California, and the market there is on the defensive, inasmuch as that state is the only area in the United States where crude postings were not lowered recently. However, Mid-Continent oil, except when greatly depressed, is not competitive with California oil, and there is hope that California prices can be maintained. It is recognized, nevertheless, that strict control of California crude production may be needed to keep

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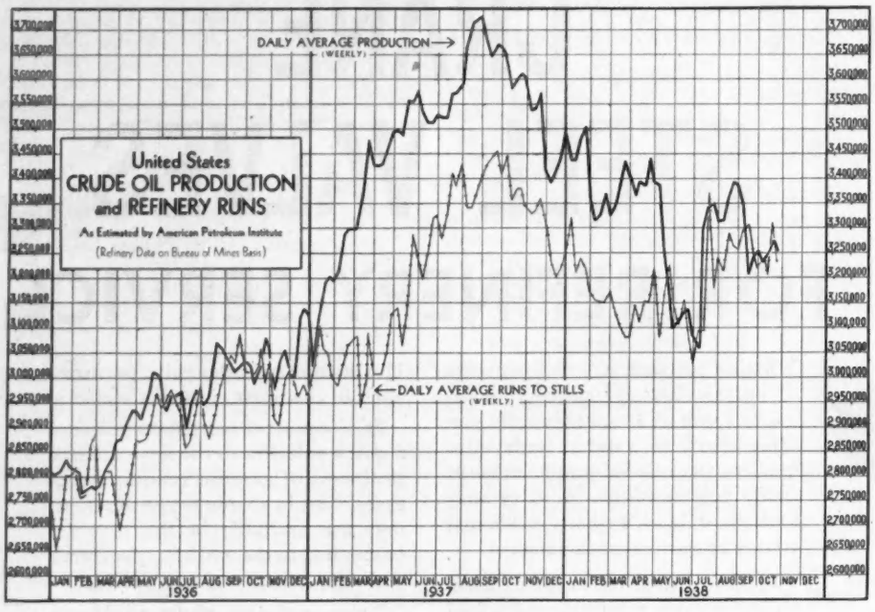

the markets firm this fall and winter, when consumption drops off seasonally.

The markets for refined products, likewise, have been favorably affected by the plans to keep crude production under strict control in November. Gasoline prices last week sagged another ⅛ cent a gallon in some instances, particularly in the Chicago market, and natural gasoline also was weaker. But kerosene prices improved, bottom quotations having been advanced ⅛ cent a gallon; and fuel oil prices held steady.

The markets were strengthened at the middle of last week also by the latest weekly statistics of the industry, which revealed continued strict control of crude oil production and refinery runs and further withdrawals of both crude oil and gasoline from storage. The crude stocks dropped to a new 16-year low, and gasoline inventories came down practically to the level of this time last year.

Statistics reflect further satisfactory operations

The latest weekly statistics of the oil industry reflected further satisfactory operations and a favorable inventory situation. Both crude oil production and refinery runs have remained low, and additional withdrawals have been made from crude oil and gasoline storage, although fuel oil stocks have been increased a little more.

United States crude oil production in the week ended October 22 averaged 3,247,400 barrels daily, having declined nearly 25,000 barrels from the previous week's level. The new production level was 10.1 percent under that of a year previously.

Crude oil runs to stills in the week of October 22 averaged 3,230,000 barrels a day, having been sharply curtailed from the previous week's average of 3,310,000 barrels daily. The runs were then 4.5 percent lower than in the corresponding week last year.

Curtailment of refinery operations permitted the withdrawal of about 700,000 barrels of gasoline from storage in the week ended October 22. The stocks of that product came down to 67,695,000 barrels, and at that level were only 1.7 percent larger than at the corresponding time last year, when the supply on hand totaled 66,554,000 barrels.

Meanwhile, gas and fuel oil stocks rose about 150,000 barrels to a new all time peak of 152,796,000 barrels, at which point they were 27.9 percent higher than one year before.

Crude oil stocks were further reduced 2,000,000 barrels in the week ended October 15, having declined to a new 16-year low of 277,001,000 barrels.

Additional changes made in gasoline market

Price changes in the oil industry within the past week have been confined largely to the gasoline market, tank car prices of that product in the Mid-Continent having declined further.

The crude oil market has become fairly steady, and no further price adjustments are indicated. The outlook for producers has been improved by the plans to maintain strict regulation of crude output in November.

Shell Petroleum Corporation announced a crude price cut for Oklahoma and Kansas to the level established by other operators. The order is retroactive to October 22. The scale starts at below 21 gravity bringing 60-cents, with top of $1.10 for 40 gravity and above, following the scale detailed on page 63 of THE OIL WEEKLY for October 17.

Tank car quotations on 63-66 octane gasoline in the Oklahoma market were off last week another ⅛ cent a gallon, and prices in the Chicago market were down similarly on all grades.

Natural gasoline was in smaller demand, and prices sagged in the Breckenridge district, Texas.

The kerosene market meanwhile was strong, and bottom prices were raised ⅛ cent a gallon.

Natural gasoline, grade 26-70, was priced generally in the Mid-Continent markets

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	Gas & Fuel Oil Stocks (Barrels)
September 25, 1937	3,666,300	*3,455,000	307,974,000	65,620,000	116,472,000
October 2	3,647,450	3,400,000	309,036,000	65,266,000	117,076,000
October 30	3,602,950	3,345,000	307,140,000	66,836,000	121,070,000
November 27	3,425,800	3,325,000	304,156,000	68,544,000	121,616,000
December 25	3,492,600	3,245,000	303,294,000	74,437,000	118,659,000
January 1, 1938	3,436,600	3,320,000	303,468,000	77,291,000	118,660,000
January 29	3,357,650	3,170,000	304,286,000	84,844,000	118,793,000
February 26	3,322,800	3,170,000	305,167,000	90,719,000	120,958,000
March 19	3,322,550	3,080,000	306,380,000	*93,192,000	122,067,000
March 26	3,405,600	3,080,000	307,557,000	92,858,000	122,979,000
April 30	3,396,150	3,215,000	307,147,000	91,339,000	128,270,000
May 28	3,098,650	3,150,000	301,583,000	87,946,000	134,315,000
June 25	3,083,900	3,025,000	293,463,000	82,412,000	137,801,000
July 30	3,316,400	3,240,000	288,514,000	76,864,000	144,294,000
August 27	3,388,500	3,255,000	285,029,000	71,754,000	146,926,000
September 24	3,251,150	3,220,000	280,278,000	68,605,000	150,468,000
October 1	3,231,800	3,235,000	280,852,000	68,602,000	151,759,000
October 8	3,249,350	3,205,000	279,007,000	68,706,000	152,275,000
October 15	3,271,600	3,310,000	277,001,000	68,426,000	152,648,000
October 22, 1938	3,247,400	3,230,000	.....	67,695,000	*152,796,000
October 23, 1937	3,613,300	3,380,000	†307,897,000	66,554,000	119,634,000
Change in past year	—10.1%	—4.5%	—10.0%	+1.7%	+27.9%

* All time peak. † Stocks, October 16, 1937.

CRUDE PRICES

New crude prices for all districts and fields, outside of California, were presented in tables appearing on page 63 of the October 17 issue. California prices are the same as those that were published on page 67 of the October 3 issue of The Oil Weekly.

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f.o.b. refineries at 2¾ to 3 cents a gallon, and sales were reported at 2¾ cents f.o.b. Breckenridge, Texas.

U. S. motor gasoline ranged in the Oklahoma market last week about as follows: 62 octane and below, 3⅝ to 4½ cents a gallon; 63 to 66 octane, 4 to 4⅝ cents; 67 to 69 octane, 4⅜ to 4⅞ cents; 70 to 72 octane, 4⅝ to 5⅜ cents.

Corresponding prices in the Chicago markets were 3½ to 4 cents, 3⅞ to 4⅝ cents, 4 to 4¾ cents and 4⅛ to 5 cents.

In East Texas the most common gasoline, 60-62, 400 end point, was priced generally at 4½ cents a gallon.

Kerosene prices f.o.b. Oklahoma refineries ranged from 3⅞ to 4¼ cents a gallon for the 41-43 water white grade, and from 4⅛ to 4⅝ cents for the 42-44 water white grade; and corresponding prices in the Chicago market were 3¾ to 4¼ cents and 3¾ to 4⅜ cents.

Fuel oil prices were not materially changed in the past week. In the Chicago market range oil was priced from 3¾ to 4 cents a gallon. The No. 1 white oil was priced from 3⅝ to 3⅞ cents, and No. 1 straw from 3⅝ to 3¾ cents. No. 2 straw was 3½ to 3⅝ cents. No. 3 oil was 3¼ to 3½ cents. No. 5 oils were 60 to 70 cents a barrel. The No. 6 oil was quoted at 35 to 50 cents.

Western Ontario crude

Effective 7 a. m. October 25, Western Ontario, Canada, crude oil prices were reduced 20 cents per barrel, making Petrolia $1.90 and Oil Springs $1.97.

Crude Production

Increase of 154,600 barrels daily makes U. S. total 3,404,400 barrels—highest figure in many weeks.

Reflecting the temporary lifting of the Texas Saturday shut-down in the past week, the nation's crude oil production showed an increase which brought the daily output to a new high level for several months. Production was 3,404,400 barrels a day, an increase of 154,600 barrels daily over the previous week, and was 37,600 barrels above the indicated demand for domestic oil as estimated by the Bureau of Mines for October.

Gains in Texas, Kansas and Louisiana greatly outweighed small declines in California and Oklahoma.

Texas output was 180,100 barrels a day higher than in the previous week, averaging 1,431,500 barrels daily, which was 72,500 barrels above the indicated demand and 156,378 above the allowable prescribed by the state.

California showed a decrease of 13,000 barrels, having averaged 657,200 barrels a day. That was 38,600 barrels a day more than the federal allocation and 42,600 barrels more than the recommendation of the Central Committee of California Oil Producers.

Louisiana averaged 267,250 barrels a day, 3300 more than in the previous week, 18,850 barrels more than the Bureau of Mines recommendation and 6780 barrels more than the state allowable.

Oklahoma encountered a decline of 18,750 barrels a day, the new level having been at 432,025 barrels daily, which was 91,575 barrels less than the estimated demand, but 4025 barrels more than the state allowable.

Kansas showed a small increase of 3325 barrels, averaging 157,075 barrels a day, which was 6325 barrels daily less than the market demand estimate and the state allowable.

Mid-Continent association changes membership meet

The annual membership meeting of the Kansas-Oklahoma division of Mid-Continent Oil & Gas Association will be held at the organization's Tulsa headquarters November 3. The date of the meeting is a change from that previously announced.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in Oct.)	State Allowable in Oct.	BARRELS DAILY FOR WEEK ENDED Oct. 29	Oct. 22
TEXAS—				
Texas Panhandle	.....	.....	69,050	61,700
North Texas	.....	.....	85,400	74,300
West Central Texas	.....	.....	35,300	30,100
West Texas	.....	.....	227,150	197,300
East Central Texas	.....	.....	103,200	90,800
East Texas Field	.....	.....	423,700	370,500
South Texas	.....	.....	255,850	223,400
Texas Gulf Coast	.....	.....	213,850	203,300
Total Texas	1,359,000	1,275,122†	1,431,500	1,251,400
CALIFORNIA—				
Long Beach	.....	.....	54,300	54,500
Santa Fe Springs	.....	.....	30,500	31,200
Huntington Beach	.....	.....	31,100	33,000
Dominguez	.....	.....	25,500	25,800
Ventura Avenue	.....	.....	33,700	35,300
Midway-Sunset	.....	.....	58,800	64,900
Kettleman Hills	.....	.....	60,400	61,900
Wilmington	.....	.....	94,500	93,500
Others	.....	.....	268,400	270,500
Total California	619,000	615,000*	657,200	670,600
OKLAHOMA—				
Oklahoma City	.....	.....	85,450	104,950
Seminole Area	.....	.....	100,750	97,525
Fitts	.....	.....	38,050	38,025
Others	.....	.....	207,775	210,275
Total Oklahoma	523,600	428,000	432,025	450,775
LOUISIANA—				
North Louisiana	.....	.....	75,450	73,550
South Louisiana	.....	.....	191,800	190,400
Total Louisiana	248,400	260,470	267,250	263,950

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in Oct.)	State Allowable in Oct.	BARRELS DAILY FOR WEEK ENDED Oct. 29	Oct. 22
KANSAS—				
Burrton-Haven	.....	.....	9,500	9,550
Russell County	.....	.....	22,350	20,675
Silica	.....	.....	10,700	10,025
Others	.....	.....	114,525	113,500
Total Kansas	163,400	163,400	157,075	153,750
NEW MEXICO	109,200	103,800	103,600	103,900
MICHIGAN	53,900	.....	54,700	54,300
ARKANSAS	54,100	.....	49,200	50,475
MOUNTAIN STATES—				
Wyoming	69,700	.....	50,700	50,800
Montana	13,800	.....	14,250	13,950
Colorado	4,300	.....	3,450	3,500
Total Mountain States	87,800	.....	68,400	68,250
EASTERN STATES—				
Pennsylvania Grade	.....	.....	72,900	72,800
Southern Illinois (New Pools)	.....	.....	75,100	74,700
Illinois-Indiana (Old Pools)	.....	.....	12,250	12,150
Others, Eastern	.....	.....	22,800	22,750
Total Eastern States	148,400	.....	183,050	182,400
Total United States	3,366,800	.....	3,404,400	3,249,800

† Shut-down for Saturday, October 29, lifted; allowable figure provides for Saturday and Sunday shut-downs.
* Recommendation of Central Committee of California Oil Producers.

Texas Mid-Continent

Largest gathering of Texas oil men are told that their prospective governor has in mind that the principal source of new tax revenue will be oil.

An intimation that the oil business may provide the chief source of revenue for paying the proposed Texas Old Age Pension of $30 monthly came at the same time last week as the industry was being told that it already paid the largest share of Texas' taxes and was being warned of the danger of being taxed out of existence.

The largest group of oil men in the history of the Texas Division of the Mid-Continent Oil & Gas Association heard these and other important comments at its 19th annual meeting, held in San Antonio last week.

O'Daniel Wants More Oil Taxes

It is likely that further methods will be devised to tax the oil industry, and that there will be a complete reorganization of the state government, it was intimated by W. Lee O'Daniel, governor-nominate of Texas. He declared he knew of no source from which taxes could come to pay such obligations as the Social Security and Old Age Pension Benefits of Texas, especially after listening to a speech made just prior to his on the taxation of the oil business in the state. He did, however, say that it must come from some industry upon which taxes could be collected, then inferred that the oil business was tangible.

A drastic reduction in state operating costs, now totaling $150,000,000 per year to govern 6,000,000 people will be made immediately, he promised. It is his belief that a large number of the state's employees, totaling 25,000 people, would be relieved of their positions in the economy wave.

Declaring that he was no politician but that he was entering the state office on a platform of better business, he has no intention whatsoever of attempting to feather his nest by passing out political plums in the way of jobs to his friends. The reduction of State employees will be a case of "letting the chips fall where they may." He further said that he realized that this may cause him the loss of many probable voters now holding state jobs or being members of families of state job holders.

O'Daniels' main discussion was on the proposed industrialization of Texas. He sees the reserves of the state continuously being depleted through the production of millions of barrels of oil and billions of cubic feet of natural gas. While this is pouring millions of dollars into the business of the state and into taxes for the operation of the government, when the present oil and gas supply is depleted this state will be without a source of revenue unless new businesses which are constant can be created. On the platform he was elected as governor, O'Daniels declares that he has been making every possible attempt to formulate constructive plans for the bringing of industries into Texas. The industrial attitude of the incoming state government already has had its affect, he said, a number of manufacturers moving to this state and others are making inquiries with the intention of establishing plants here.

It is his contention that through the industrialization of Texas, development of markets and material readjustment of government by the reducing of numerous bureaus and taking the state's "nose out of private industry," that taxation can be sufficiently reduced that no individual business will be overburdened. It is his belief that within time the taxation on numerous state industries can be cut to ten percent of the present levy.

Oil Important to Texas

The importance of oil to the State of Texas was stressed by C. P. McGaha, president of the association in his annual address. The past seven years has marked a new cycle which has wrought the greatest and most important change in the economic life of Texas. During this seven-year period, he pointed out, oil development has spread to every section of the state, creating employment and offsetting reduced incomes from crops and live stock.

"Although oil has been produced commercially in Texas over a period of nearly 50 years, a fact of real significance to everyone living in this state is that over one-half of the 5 billion barrels produced thus far has been produced within the past seven years. The extent to which oil development within the past seven years has influenced the welfare of Texas and its people is strikingly evident by a definite correlation between all basic statistics of the state with the upward trend of oil production during this period. Comparative statistics for this seven-year period show more employment, more automobiles, more bank deposits, more building, more telephones, more utility consumers, increased income tax returns, big increases in population, more export tonnage moving through Texas ports, more miles of improved highways, more gasoline tax collections and more taxes levied and collected by the state and its local subdivisions of government."

McGaha stated that in the past seven years Texas oil producers had spent a total of nearly 4 billion dollars in the state. Last year all branches of the Texas petroleum industry spent 755 million dollars in producing oil and gas and manufacturing these resources into consumable products. Nearly half of this money was spent in taxes, wages and salaries, and lease and royalty payments.

The benefits of oil development may be appreciated readily in the light of their effect upon taxable values in many of the newer oil producing counties. In 19 counties where new development has occurred within the last 10 years, taxable values have shown a total increase of nearly 419 million dollars. The search for oil has spread over 240 of the state's 254 counties. Today, all is produced in 130 counties of the state. Forty-five million acres of land are under lease, and last year payments of 105 million dollars were made to Texas farmers and landowners for lease rentals, lease bonuses and royalties.

Turning to the problems of the industry, McGaha pointed out that dry holes to date have cost one billion dollars. Last year's cost was 85 million dollars for dry holes.

Despite the tremendous volume of oil production, Texas oil wells, due to proration, average only 16.9 barrels per day.

Last year the industry contributed in taxes to all Texas public schools the sum of $17,630,888, equivalent to $11.37 for every child attending free schools.

Oil Taxes High

The Texas oil industry has paid the State of Texas the tremendous total of $126,006,176 in direct state taxes, exclusive of the gasoline tax, it was pointed out by George H. Sheppard, comptroller of public accounts. This huge sum, paid by Texas oil men since the first crude oil production tax in April, 1905, includes $116,431,706 in production taxes, $5,552,948 in so-called regulating pipe line tax, $2,377,793 in gross receipts levies on natural and casinghead gas and $1,643,729 in taxes on intangible values of pipe lines.

"The regulating pipe line tax is misnamed," Comptroller Sheppard declared. "It is also a production tax applying to all oil produced and goes to the oil and gas division of the Texas Railroad Commission for conservation enforcement. The regulating pipe line tax did not go into effect until 1917, while the gas gross receipts tax became effective August 22, 1931."

"There are approximately 4500 operators reporting to my office and reporting production on about 16,000 leases," Sheppard said. "It might be interesting to you to know that I have a ledger sheet on every lease and post the production as reported to each lease."

Warned of Excess Taxes

Warning oil operators to protect themselves against being taxed out of business, Harold G. Neely, chairman of the Tax Committee, stated new methods are being devised constantly, and new types of taxes created, to "take" profits from the industry.

In numerous counties of Texas today it takes 51 days of working interest production to pay annual state and local tax levies against crude oil. The average oil well in Texas paid last year state and local taxes which were equivalent to the market value of 30 days working interest production. The federal tax bill, added to home levies exacted a toll equivalent to 40 days working interest production from the average Texas oil well.

Since royalty interest in Texas oil wells takes from 40 to 50 days production of the year's output, it is apparent that taxes constitute an ever-

riding one-eighth royalty. In other words, Texas oil producers must operate their wells 80 days a year—and in some instances 101 days a year—for the tax collector and the royalty owner before they themselves begin to participate in the proceeds of their operations. Furthermore, the oil operator must pay the cost of producing the tax collector's and royalty owner's share of the year's oil production from his wells.

Taxes levied on stripper well properties and production present a serious problem to thousands of independent oil operators in Texas. The alarming fact is that over 20,000 pumping wells in the state paid last year in state and local taxes an average of $118 while the average net profit left for the stripper well producer amounted to only $25 a year.

With stripper well production in North and West Central Texas now selling at an average of 92 cents per barrel, on which the cost of production, according to government figures, averages $1.10 a barrel, last year's meager profit of $25 becomes a loss of $187. Wages and equipment costs are unchanged; the royalty owner gets $32 less; the tax collector's "take" is cut seven dollars, but the oil producer's actual loss is $212, because he not only loses his $25 profit but has to dig down in his own pocket for $187 more to pay $257 in royalty and taxes.

Merritt H. Gibson of Longview, county judge-nominate of Gregg County, declared that "Unless the state and federal governments recognize the untenable situation being brought about by the constantly increasing tax burden upon the oil industry, and unless steps are taken to reduce direct state and federal taxes to a more equitable level, many of the state's local subdivisions of government face a serious situation through an inevitable retarding of oil development, forced upon the oil industry by an unbearable tax load.

"The situation is far more serious than many county officials may perhaps realize, and I cannot emphasize too strongly that it is time for all local taxing authorities of Texas to take stock of their future outlook and weigh the effects of the constantly-rising load of state and federal taxes on the oil industry. For instance, in my county of Gregg, the oil industry alone paid in state and federal taxes last year the huge sum of $7,400,000, while our local subdivisions of Gregg County government collected about $2,300,000. This shows that the state and federal government already are taking more than three-fourths of the total annual taxes paid by our local oil industry.

"On the other hand, a state tax policy that permits a substantial profit to the oil industry is of direct benefit to the local subdivisions of government. The expectation of substantial profits is an incentive to productive activity. Every well that is drilled, every pipe line that is laid, every refinery that is constructed, is in some county, some school district and one or more other local subdivisions of government. Thus tax valuations are raised and local revenue increased.

Social Security Reports

One of the most important questions arising in connection with social security legislation in Texas involves the issuance of separation reports, according to Raymond Myers, chairman of the committee on social security of the association.

Myers stated that his committee had given careful study to this matter and had several conferences with Orville S. Carpenter, executive director of the Texas Unemployment Compensation Commission at Austin. A memorandum from the Social Security Board at Washington was introduced by Myers from which he quoted as follows: "Whenever a worker is separated from his employment under conditions which the employer contends were such as to bar or suspend right to benefits, the employer shall give him at the time of separation, or within 24 hours thereafter, a separation notice which shall show the statutory cause of separation, preferably through means of a check list printed on the notice."

"Your committee had concluded that the use of separation notices was unnecessary and burdensome," said Myers "and submitted to Mr. Carpenter a brief, in the form of a letter, a copy of which has been filed with the secretary of this Association. The rules and regulations as issued do not require the filing of separation notices, thereby

Mid-Continent Texas Association Re-elects Officers

With one exception all officers of the Texas Division of the Mid-Continent Oil & Gas Association were re-elected at the annual meeting in San Antonio last week.

This means that Charles P. McGaha, Fain-McGaha Oil Corporation, Wichita Falls, will serve another term as president, and that George C. Gibbons will continue as executive vice president.

The only change came among the district vice presidents when J. L. Collins was elected to succeed R. Stroube, of Stroube & Stroube, Corsicana, as vice president for East Central Texas.

Other district vice presidents, all of whom were re-elected, follow:

H. R. Cullen, Cullen & West, Houston, for the Gulf Coast district.

R. L. Underwood, Underwood Drilling Company, Wichita Falls, for North Texas.

Bryan W. Payne, Iowa-Payne Oil Company, Tyler, for East Texas.

E. J. Dunigan, Jr., independent operator, Pampa, for the Panhandle.

Harry Adams, independent producer, Midland, for West Texas.

J. C. Hunter, Grisham-Hunter Corporation, Abilene, for West Central Texas.

Al Buchanan, independent operator and drilling contractor of San Antonio, for Southwest Texas.

Eugene McElvaney, Dallas, was re-elected treasurer.

CHARLES P. McGAHA

GEORGE C. GIBBONS

eliminating much trouble and expense incident to the administration of the Act and in spite of the memorandum this manner of handling seems to be acceptable to Washington."

A detailed study is now being made under the direction of the Social Security Board, according to Myers, which has for its declared objective the more simple and economical administration of the law in the various states. The methods now being used are being examined and compared, to the end that past experience may aid in the future. The principal aims of the study have been listed by the Texas Committee as follows: Greater economy in unemployment insurance administration. Development of methods for calculation and paying benefits which will be more easily understood by workers and employers and will result in more prompt payment of benefits. Reduction, insofar as possible, of the volume of detail required of employers in complying with the legislation.

Theft Program Successful

Recovering approximately $200,000 worth of stolen oil field equipment during the past year, the Texas Mid-Continent Oil & Gas Association's theft prevention program was declared a most complete success by Paul W. Pitzer, of Breckenridge, committee chairman.

One hundred and sixty-four recoveries of identified oil field equipment have been made to 92 oil companies in the past year, besides six companies which benefited by capture of a gang which confessed 100 thefts of mercury in the Panhandle area, Pitzer reported. This work was in cooperation with county and state officers.

Largest of the recoveries was of $121,000 worth of equipment found, with $103,000 identified and returned to its owners, when a large East Texas theft ring with headquarters at Longview was broken up. Fifty thousand dollars of this equipment was found in a fence's warehouse at Gladewater, $20,000 in a supply house at Houston and the rest was pointed out by the thieves where they had hidden it in the piney woods of East Texas. Besides breaking up this ring and the mercury theft gang, association investigators working with company men and peace officers have stopped line-tapping of gasoline in East Texas, with the ring-leaders convicted.

In the past 18 months, 90 oil field thieves have come under the arm of

Pyron and Roeser Presented Distinguished Service Award

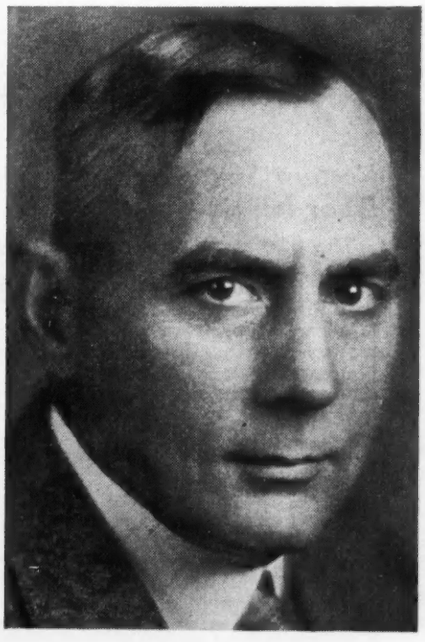
Distinguished service awards by the Texas Division of the Mid-Continent Oil & Gas Association, an annual event, this year went to Walter B. Pyron, vice president of Gulf Oil Corporation and several subsidiaries, Houston, and Charles F. Roeser, of Roeser & Pendleton, Inc., Fort Worth.

Pyron's first connection with the oil business was in 1907 in a clerical capacity with J. M. Guffey Petroleum Company at Beaumont, the forerunner of the Gulf organization. He rose to head the company's operations in North Louisiana, during which time he had been elevated to a vice presidency. During 1918 he was transferred to Fort Worth in charge of North Texas operations. He moved to Houston in 1924 to be assistant head of the company's work there. This was followed by moving to California as vice president and general manager of Western Gulf Oil Company. In May, 1935, he returned to Houston as vice president of the concern and its subsidiaries.

Pyron has been active in National Guard activities since the World War, and in August this year was named brigadier general of the 112th Cavalry, 56th Cavalry Brigade of the Texas National Guard. Pyron is keenly interested in aviation, and at present is chairman of the aviation committee of the Houston Chamber of Commerce.

Roeser has had a long active oil industry career since childhood days. His father, William Roeser, Jr., was an oil operator, and young Charles worked as a roustabout in the Ohio fields during school vacations. In 1906, he and his brother, W. H. Roeser, came to Oklahoma, where they operated for a number of years as drilling contractors and independent operators. After a turn in the army during the World War, he returned to Oklahoma and the oil game, but the Ranger boom took him to Texas in 1920. He and T. T. Pendleton formed the firm now known as Roeser and Pendleton, Inc.

Early during the boom days of East Texas, Roeser became converted to the cause of curtailment, and with the help of others organized the Texas Oil & Gas Conservation Association. He served as president of this organization in 1932 and 1933. During 1932, 1933 and 1934, he was vice president of the American Petroleum Institute. He was selected by President Franklin D. Roosevelt as a member of the Planning and Coordination Committee to formulate the petroleum code, and served the committee as vice chairman. In November, 1935, he was elected president of the Independent Petroleum Association, and has continued to serve in that capacity. He was returned to this position for another term just last week. Roeser also is a member of the advisory board of the United States Bureau of Mines.



WALTER B. PYRON

CHARLES F. ROESER

the law, with those not yet put in the penitentiary have cases pending. During the past fiscal year the association has paid a large number of rewards to sheriffs and peace officers for their work in the arrest and conviction of those guilty of felony thefts. One sheriff has won three rewards and another two. The association has distributed 2000 metal signs announcing the $100 reward to be put up on leases, at warehouses and the like, Pitzer reported.

The association's theft prevention work, started 19 years ago at Ranger, has been expanded until it is now not only statewide but also includes cooperations with surrounding states.

Economic Statesmen Needed

The need for more economic statesmen was cited by Congressman Hatton W. Summers. People have their eyes closed to the situation and unless something is done, and that done immediately, the United States may find itself in the position of a changing governmental situation.

A democratic form of government can last only as long as the citizens of the state are able to control it. Should they become too weak to do so, then the burden of government will fall into other hands. That was the situation in Germany and other nations now under the influence of dictatorships.

"We are not suffering from a skin disease, the illness is much deeper. We, therefore, cannot treat it from that point of view, but must find a more certain cure. We must act now to protect ourselves from any possible deprivation of rights," he said.

At the present time, as in the past, there has been much pulling of businesses and industries in their own directions. The association of all for one common good, rather than for individual gains, is vital to the sustenance of the nation and the people within it, he further declared.

New Deal Attacked

Dr. Gus W. Dyer, of Vanderbilt University, unleashed a vicious attack on the New Deal, branding it as "a drunken orgy which will not solve the nation's problem." He described it as "getting drunk to cure a hangover." It will work so long as the money holds out, but ultimately, there will be no money left to purchase the liquor. In such a manner he described the present political situation as a complete destruction of all things for which good Americanism stood and that it has brought to an end the real purpose for which the constitution was written.

"It has become so bad that it is a crime to give a man a job so that he can earn a living. Unless you can pay more than some duties are worth, you are forced to cause able bodied people to be placed in the bread lines. That cannot be classified as good Americanism and good business economics," he declared.

The government is supposed to protect business, not coerce it, he said. He likened the position of proper government to an umpire on a football field, "if a player wants to run the wrong way, its his own business; the only job the umpire has is to see that he plays the game fairly according to the rules for the common good of the game."

Pennsylvania investigators hear 21 witnesses last week

The Pennsylvania public utility commission, continuing its probe of practices and rates of natural gas companies, last week took testimony from representatives of 21 companies and individuals engaged in the gas business.

Companies and individuals called were: Ludlow Gas & Electric Company, Ludlow, McKean County; Mt. Jewett Gas Company, Warren County Gas Company and Mountain Gas Company, Kane; S. J. Conquer, Sheffield, Warren County; L. S. and E. W. Letson, Eldred, McKean County; St. Nicholas Oil & Gas Company, Mayport, Clarion County; Sykesville-DuBois Oil & Gas Company, Brookville, Jefferson County; George B. Fasenmyer, Leeper, Clarion County; Saxonburg Heat & Light Company, Saxonburg, Butler County; Cadogen Gas Company, Kittanning, Armstrong County; H. J. Smith, Pittsburgh; H. R. Brown, Karns City, Butler County; S. A. Vogt, Bruin, Butler County; S. R. Stoughton, Slippery Rock, Butler County; Natural Gas Company of West Virginia, operating in Washington and Greene Counties; Waynesburg Home Gas Company, Waynesburg; Victor Gas Company, Washington; S. C. Bole Estate, Leechburg; Nixon & Company, Carnegie, and A. A. Rickenbrod, Beadling, Allegheny County.

Texas special train to A.P.I. meeting arranged

A special train to carry Texans to the annual meeting of the American Petroleum Institute, to be held in Chicago from November 14 to 18 inclusive, has been arranged. The train will be strictly a special one, operating separately from any regularly scheduled runs and on faster time. It will originate in Houston, but connections are provided so that persons from other localities may join it at Longview. Arrangements also have been made so that Houstonians and others desiring to see the Rice and Texas A. & M. football game on November 12 may do so, and join the Chicago special afterwards. Moreover, a schedule has been worked out whereby those desiring to return from Chicago in time to see the Rice vs. TCU football game in Houston on November 19 may do so.

The Oil Men's Special will be operated by the Missouri Pacific, and will leave the Houston Union Station at 6 p. m. on Saturday, November 12. It will arrive in Chicago via the Illinois Central Railroad at 6 p. m., November 13, for the opening of the A. P. I. convention Monday morning, November 12. Those from Dallas, Fort Worth, East Texas, Shreveport and North Texas points may make connections with the Oil Men's Special Train at Longview at 10:45 p. m. November 12.

Those Houstonians desiring to see the Rice-Texas A. & M. football game will leave the Union Station on a Missouri Pacific special at 11 a. m. November 12 and will arrive in College Station at 12:45 p. m. Following the game, the football special will leave College Station at 5:30 p. m. and arrive at Spring, Texas at 6:45 p. m., where connections will be made with the Oil Men's special leaving Houston at 6 p. m.

Those attending the football game at College Station and wishing to join the Oil Men's Special at Spring may facilitate the handling of their baggage by having it placed in their Pullman assignment on the Chicago special before going to College Station.

A special train will leave Chicago at 10 a. m. Friday, November 18, that will arrive in Houston about 10 a. m. November 19, which will be in time for the Rice vs. TCU football game.

Institute of Petroleum to meet in Chicago

The new oil fields of Illinois will be described by Theron Wasson, chief geologist for The Pure Oil Company, at the fourth annual American meeting of the Institute of Petroleum to be held at 6:00 p.m., Wednesday, November 16, in Stevens Hotel, Chicago, during the annual convention of the American Petroleum Institute. Dr. J. Bennett Hill of Sun Oil Company will preside.

Dr. E. C. Williams of Shell Development Company will discuss "Modern Research Angles in Oil;" and Dr. Gustav Egloff, Universal Oil Products Company, will speak on "Substitute Motor Fuels Over Europe."

W. B. Way, general manager of the International Petroleum Exposition, Tulsa, will tell what is to be done for the technical side of the industry at the next Tulsa exposition to be held in 1940.

Dr. C. W. Wagner, The Pure Oil Company, 35 East Wacker Drive, Chicago, invites reservations for the dinner meeting.

Texas postpones hearing on condensate wells

The Texas Railroad Commission has postponed until November 22 its hearing on condensate wells which was scheduled for November 14. The delay was ordered to enable operators to attend the A. P. I. convention in Chicago from November 14 to November 18.

Eastern States loses labor hearing

The trial examiner in a recent hearing involving the Eastern States Petroleum Company, Houston, has ruled that the company dominated and interfered with the formation and administration of the Eastern States Employees Representation Plan and restrained employees in the exercise of their rights under the Wagner law. In his report to Washington the examiner recommended that the National Labor Relations Board instruct the oil company to cease and desist from coercing employees in self-organization and collective bargaining; from dominating any labor organization; to withdraw recognition from the Employees Representation Plan; and to establish the independent union as a bargaining agency.

The National Labor Relations Board is expected to act on the recommendations within 60 days.

Pipe Line News

Two additional sources protest Rocky Mountain to Wisconsin-Minnesota gas line . . . Canadian pipe hearing postponed to obtain further information.

Senators oppose Wyoming to Wisconsin gas line

Emphatic protests against construction of a natural gas pipe line from Montana and Wyoming fields to supply North Dakota, South Dakota, Minnesota and Wisconsin markets came last week from two sources. Application for permission to construct the line is now before the federal power commission. The project is advanced by the Public Service Gas Company of Montana, which is seeking a $50,000,000 Reconstruction Finance Corporation loan.

United States Senator H. H. Schwartz, Democrat of Wyoming, declared statements that governors and congressional delegates of several western states, including Wyoming, had approved the project to be false. Governor Miller of Wyoming, the senator said, had wired both the power commission and the RFC stating opposition to the project.

"There is, in my judgment, no necessity of such a gas pipe line to serve the particular territory contemplated," Senator Schwartz told the power commission last week. "In the vicinity of Sheridan, Wyoming, and the state of Montana there are highly developed coal mines producing a high grade of coal, and the ascertained unmined tonnage of coal would outlast any demand within the lifetime of the present generation. Furthermore, with the great technical improvement in handling coal, and in the use of coal by automatic devices, there should be no substantial spread between the cost of coal and natural gas.

"It should also be remembered," he continued, "that a substantial part of the revenue earned by railroads (and certainly they need revenue, and the country needs the railroads) is derived from hauling coal. Every railroad crossing the states mentioned above not only hauls coal, but immense coal deposits are found, with well developed mines, immediately adjacent to the rights of way.

"I am not unmindful of the fact that the states of Montana and Wyoming have immense reservoirs of natural gas in seemingly inexhaustible supply, and that the production of power through falling water is also making great strides. To this should be added that fuel oil has also been displacing coal. Nevertheless, within reasonable limits of comparable cost to the consuming public, one should not forget that under present economic conditions our greatest problem is to find employment for American citizens. Of the four sources from which light, power and heat are obtained, coal gives by far the greatest employment to men, in proportion to the output of the base product."

United States Senator Joseph C. O'Mahoney of Wyoming joined his colleague in protesting the natural gas project, declaring he had not given it approval. "Before leaving Washington last week I called personally upon federal officials to whom the application had been sent and made it clear that the allegation of approval by the Wyoming delegation and Governor Miller was without basis of fact," he said.

It was indicated last week that the Wisconsin public service commission may take part in proceedings before the federal power commission relative to the Public Service Gas Company's application for a certificate of necessity and convenience authorizing construction of a 1500-mile natural gas pipe line from Wyoming and Montana fields.

The line would make natural gas available to the following Northwestern Wisconsin cities: Hudson, Baldwin, Hammond, Hirshey, Wilson, Knapp, Menomonie, Eau Claire, Chippewa Falls, New Richmond, Durand and Superior. They would be the first communities in the Badger state to receive natural gas, as the product is not found in the state and lines from out-of-state fields do not cross Wisconsin's boundary. Natural gas is supplied in all surrounding states.

State commission officials said they were investigating the project to determine what position to take in proceedings before the federal power commission.

Hearing on Canadian pipe line adjourned to December

A pipe line expert from Texas may be brought to Alberta to study that phase of the Canadian province's oil industry and present testimony before a Royal Commission investigating the industry which opened its inquiry at Calgary last week. After two days of hearings, the commission adjourned until December 5 to permit commission counsel and oil companies to make studies and submit briefs.

The inquiry was authorized a week ago to probe all phases of Alberta's oil industry and determine, among other things a proper price for crude oil and proper charges for crude oil transportation. Members of the commission are Justice A. A. McGillivray, of Calgary, member of the appellate division of the Supreme Court of Alberta, and L. R. Lipsett, of Ardley.

J. J. Frawley, K. C., of the Alberta attorney general's department who is officiating as commission counsel, said that despite increasing production of evidence would be submitted showing crude in Alberta, now throttled because of a lack of market, thousands of barrels of crude oil and refined gasoline are imported every month.

He said that evidence would show that The Texas Company of Canada, Ltd., subsidiary of The Texas Corporation which markets 13.5 percent of the total gasoline sold in the province, was by far the largest importer of refined gasoline into Alberta from the state of Montana.

Affairs of this company, he said, would play a large part in the hearing because of the fact that it is a matter of record that gasoline imported into Alberta by The Texas Company from Montana is sold at prices in line with similar products made from Turner Valley crude. The company is required to pay, in addition to haulage charges, a duty on every gallon of gasoline imported into Alberta from the United States, making it interesting to ascertain, he said, production costs of the products manufactured in Montana and then shipped to Alberta for re-sale.

An order applied for by A. L. Smith, K. C., attorney for the Alberta Petroleum Association, asking that counsel for oil companies be allowed to examine testimony to be submitted by Frawley in advance of its submission when it would become public property was denied by the commission chairman. Smith argued that oil companies and their counsel wished to proceed in that manner in order to be able to prepare their answers to any vexing questions which might come up. Justice McGillivray declared Frawley could prepare his evidence in any manner he wished, and that counsel for the companies would be given their usual opportunities to answer.

French continue study of proposed gasoline line

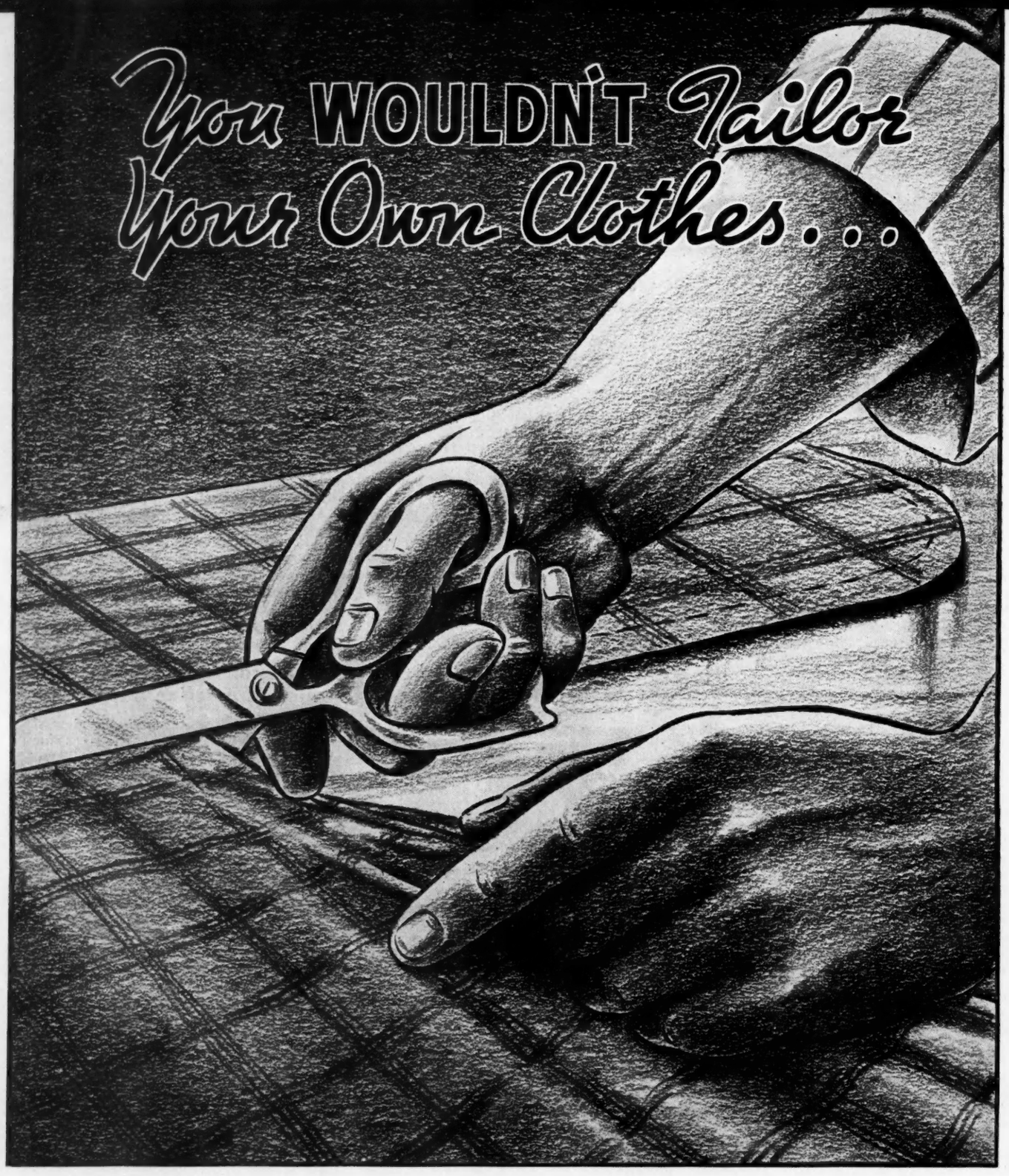
Engineers are proceeding with studies of the contemplated 450-kilometer gasoline pipe line from the Atlantic coast to the center of France, and the project has not been authorized pending their work. The line would be built by the French government, at a cost of about 150,000,000 francs, with funds for public works, as a national defense undertaking. It would extend from the port of Donges, where several refineries are located, to a point near Montargis, about 15 kilometers from Orleans.

Bureau of Mines works on substitute oil products

Foreseeing the probable eventual exhaustion of United States petroleum resources, the Bureau of Mines during the past year has devoted considerable attention of experiments in the production of oil from coal through the hydrogenation process, it was disclosed October 24 in the annual report of Director John W. Finch to Secretary of the Interior Harold L. Ickes.

"By the time that depletion of our petroleum resources reaches the point when a motorized Nation must begin to look to other sources for some of its fuel," Director Finch declared, "it is hoped that a motor fuel can be supplied from coal so efficiently and cheaply that the transfer can be made from the old fuel to the new without drastic adjustments."

During the year, the report showed, engineering studies of practical value in efficient development have been conducted in various oil fields, and state boards frequently have asked the bureau's petroleum engineers to assist in cooperative studies of special problems, as in Kansas, where the bureau has developed methods for the disposal of oil-field brines which were affecting livestock and crops and contaminating drinking water supplies.



★ It would be impractical to tailor one's clothes, wouldn't it? Mainly, because it requires skill and experience to fashion and tailor a suit—one that you would take pride in wearing—one that would give you the greatest amount of service at the most reasonable cost.

Similarly, electric power has something in common with tailoring in that it is a highly specialized service, managed by skilled and experienced persons who know how to manufacture electric power at the lowest NET cost to you.

Your electric power company has many enlightening facts concerning the efficiency and low cost of purchased electric power. Ask to have one of their representatives give you these facts. Take advantage of this modern power—the power that provides maximum efficiency at the lowest NET cost.

PETROLEUM ELECTRIC POWER CLUB

WEEK'S DRILLING HIGHLIGHTS

Completion of 537 wells in the United States last week brings the total for the year to 23,214, as against 27,810 at the comparable date last year. Texas, as usual, had the most completions of all the states, but Oklahoma and Kansas have been replaced by Illinois as runner up, the latter last week having more than the two Mid-Continent states combined. Comparison of figures upon which weekly permits are available indicates more wells being completed than started, although Texas for the week in question shows 58 more starts than completions.

New Mexico

Strong indications that a new producing spot will be uncovered in the trend northwest of Hobbs. Field work in Lea County continues above last summer's level although pipe lines are not able to handle the oil.

East Texas

Wood County is slated to get an early test to the Trinity in a continuation of the deep program throughout the Woodbine belt that is in a slump following recent completion of distillate producers.

California

". . . right back where I started from." Newest California strike is in sight of the spot where early missionaries, seeking drinking water from the mountain side, first discovered heavy oil. Flow of the well was 1100 barrels from 5365 feet. No great rush of drilling is expected although some offsets will be required.

Comparison of Permits Granted for New Wells

STATE	Week Ending Oct. 29	Total this Mo.	Total this Year	Total this Date Last Year	1937 Year Total
Arkansas	6	16	204	213	240
California	20	78	1,018	1,332	1,584
Louisiana	14	114	1,069	1,068	1,227
Kansas	28	114	1,314	2,362	2,363
Michigan	25	80	771	828	958
Oklahoma	36	176	1,734	2,356	2,711
Texas	262	758	10,838	14,998	17,238
Total	391	1,336	16,948	23,157	26,621

North Texas

K-M-A has declined to 71 operations, a slump that keeps the area about at par with work in other fields of the state. Bottom water was encountered in an edge test of the Jackson-Canyon pool.

Illinois

Salt water flow from Benoist sand in a test proposing to extend Lake Centralia field dampens the possibility of that formation but the hole will go on to McClosky. Other operations in Illinois were routine. Several wildcats considered important are not yet to determination.

Kentucky

Birk City seems definitely extended two more miles north but a test three miles northwest was abandoned at expected level; it may go deeper, however. Wildcatting continues active.

South Louisiana

Killing a well to go deeper resulted in discovery of a new sand at North Crowley. At Bay St. Elaine mechanical difficulties were overcome to get in a producer from a new depth.

Southwest Texas

The Lower Texas Gulf Coast was back to normal with reports of new sands and extensions, one of which is crowding the famous fishing grounds at Aransas Pass. Jackson County came through with the third strike for the year. Along the Rio Grande several wildcat tests hold interest as they approach testing stage.

Texas Gulf Coast

Completion of the much-talked-of well at League City in Galveston County as an oil producer continues talk of the big money paid for leases but the figures quoted are not so high. Two offsets have been started. A disappointment was salt water in a wildcat at Iowa Colony in Brazoria County, but hopes for the area are not abandoned as it is thought this test was on the edge of the prospect.

North Louisiana

Lisbon field is in prospect of again getting active following completion of one of its two active wells as a producer. Shreveport is marking time, but its completion last week has changed from a dry gasser to a flow of 103 barrels of distillate in 24 hours.

Summary of Wells Completed in the United States Week Ending October 29, 1938

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total, 1938	Total this Date, 1937
Alabama	.....	.....	.....	.....	.....	2	1
Arkansas	7	7	.....	.....	6,905	189	106
California	23	19	.....	4	15,351	1,057	1,258
Colorado	.....	.....	.....	.....	.....	6	17
Florida	.....	.....	.....	.....	.....	.....	1
Georgia	.....	.....	.....	.....	.....	1	.....
Illinois	78	64	1	13	14,773	1,270	274
Indiana	.....	.....	.....	.....	.....	124	105
Kansas	39	32	.....	7	26,766	1,432	2,253
Kentucky	16	5	2	9	490	672	402
Louisiana	18	12	.....	6	3,744	912	813
Michigan	20	13	.....	7	4,360	796	802
Mississippi	.....	.....	.....	.....	.....	14	11
Montana	2	1	.....	1	22	67	174
Nebraska	.....	.....	.....	.....	.....	1	.....
New Mexico	11	10	.....	1	4,715	448	588
New York	*20	18	2	.....	11	*562	*1,070
North Dakota	.....	.....	.....	.....	.....	1	.....
Ohio	12	4	3	5	19	798	1,249
Oklahoma	32	17	5	10	22,113	1,821	2,538
Pennsylvania	*30	24	3	3	26	*1,751	*2,525
Tennessee	.....	.....	.....	.....	.....	2	.....
Texas	204	148	10	46	181,479	10,601	12,756
Utah	.....	.....	.....	.....	.....	3	.....
West Virginia	22	4	17	1	27	593	777
Wyoming	3	3	.....	.....	467	91	90
Total this week	537	381	43	113	281,268	23,214	27,810
Total last week	528	367	46	115	229,093	.....	.....
Total this year	23,214	16,084	1,655	5,475	14,849,342	.....	.....

* Includes water-intake and pressure wells.

Oklahoma Fields

Cleveland County wildcat show in unidentified sand.

St. Louis recompletion in Earlsboro sand is important.

Tulsa.—After drilling through an unidentified sand showing good saturation from 6915 to 6917 feet, Gulf Oil Corporation's wildcat, Taylor 1, SE SE SW 1-7n-2w, western Cleveland County, has become the No. 1 well of the state. The location of the test is on the problematical extension of the structure of Noble field discovered by W. A. (Gus) Delaney's Bugher 1, and is one mile north of the latter well.

Taylor 1 topped Pawhuska lime at 3330 feet, Tonkawa at 4545 and the Checkerboard at 5515 feet. The stray carrying the saturation was a clean sand although of minor thickness. The discovery well failed to record a show at this depth. As the original intention of the operator was to go to the same depth now producing in the Delaney well, drilling is to be resumed although the sand may be given a later test. About 750 feet of drilling remains before the lower pay is topped.

W. A. Delaney's Bugher 1, SE SE SW 12-7n-2w, the discovery, has been testing during the week. When first completed in Wilcox sand this well gave indications of opening an important pool, but salt water soon developed and has been a problem. Considerable open hole has been left below the casing and a number of plugbacks were made to shutoff the water. These were only partially successful. After the last attempt the hole was drilled out to 7633 feet and fluid rose to within 1000 feet of the surface. However, at least half of the fluid in the casing was water. At a previous plugback to 7672 feet the well flowed 350 barrels of crude with twice as much water.

Carter Oil Company et al's Smith 1, CSE SW 26-5-8w, the deep test scheduled to go to 10,000 feet in the old Chickasha gas field of Grady County, is drilling broken sand and shale at 4631 feet without further shows. The test is drilling slowly and coring as it deepens.

OKLAHOMA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Caddo—		
Magnolia, Lackey 9, nwc 11-5n-9w (pb 3820 ft)	¶1	4059
Olsen Dr. Co., Rigney 1, nec nw 12-5n-9w	*	6532
Comanche—		
S. S. Oil Corp., Kirkus 1, ne ne nw nw 29-2n-10w	*	1018
Cotton—		
Turner et al, Collins 3, nw ne se ne 18-4s-10w	*	1300
Creek—		
Stenberger, Kemble 1A, se ne ne 10-14n-10e	12	2645
Black et al, Atthis 1, nwc se 22-18n-9e	*	2652
Latimer—		
La Flore, Raner 28, se swc nw 12-6n-22e	¶½	2090
Lincoln—		
Wilcox O. & G. Co., Fitch 6, se ne ne 15-14n-6e	75	2984
Okfuskee—		
Berry, Sands 1, swc sw 22-10n-11e..	*	2881
Sass, Birdcreek 1A, sw sw nw ne 7-10n-12e	¶3	961
Okmulgee—		
Hewitt, Lewis 1A, nec nw 2-13n-11e (pb 2407 ft)	5	2412
Detrick, Alexander 1, se se sw nw 15-13n-13e	*	2882
Metzger, Fields 1A, c n½ sw 3-14n-14e	*	1205
Wilson, Corbray 1A, sw nw sw se 22-14n-14e	*	1185
Osage—		
I. T. I. O. Co., 458, cel se nw se 9-26n-11e	¶2.8	1893
Pawnee—		
Johnson O. & Refg. Co., Mann Estate 12, ne nw sw sw 23-20n-7e...	17	2898
Payne—		
Mid-Continent, Brandon 3, se ne ne 13-18n-1e	5700	4844
Columbia 5, sw ne sw 18-18n-2e..	5715	4763
Gray 1, ne sw sw 18-18n-2e.....	6936	4839
Pontotoc—		
Crosbie, Hardin 3, ne sw ne 30-2n-7e (pb 2804 ft)	25	3628
Pottawatomie—		
Elbar Oil Corp., Hathcock 2, sec sw 11-7n-4e	85	3153
Jones, Gilbreth 1, sec 25-7n-4e.....	180	4288
Berkley, School Land 3, se ne ne 36-7n-4e	2000	4295
Pioneer Dr. Co., Billington 2, sw ne sw 36-7n-4e	218	4218
Alma Oil Co., Rhodd 1, se ne sw 32-7n-5e	375	4110
Canfield 1, nw ne sw 33-7n-5e....	450	4252
Seminole—		
Vierson, Community 1, nw ne sw sw 25-5n-7e (pb 2257 ft)	5	2375
Troup & Moore, Sanders 2, ne se sw 27-6n-5e	300	2687
I. T. I. O. Co., Davis 4, se sw sw 13-8n-6e (pb 3451 ft)	15	4301
Sequoyn—		
Western Okla. Gas Co., Williams 1, se se ne nw 28-12n-27e	¶1¼	838
Stephens—		
Mitchell, Westphal 1, sec 33-2n-4w	*	4505
Tri Oil Co., Schick 1, ne nw nw ne 27-1s-8w	*	2367

*Failures; †Junked; ¶Million cu. ft. gas.

Recompletion at St. Louis

The most important well of the week in the St. Louis re-development of Pottawatomie and Seminole counties was Tabor and Colman's Green 2, NE SW NE 35-7n-4e, Pottawatomie County. Originally completed for a producer in Simpson series, operators recently plugged back to 3413 feet. Casing was perforated from 3380 to the new depth. On first test the well flowed 207 barrels of oil in 24 hours and made 3,500,000 cubic feet of gas. The pay is the Earlsboro sand, and as this is the first well to produce from this stratum in the south part of the field it enhances the possibility of expanding the Earlsboro zone of production to the south.

Across the line in Seminole County, D. Mallarnee's Hemmrick 1, NWc 34-7n-6e, an old well producing gas from a shallow pay, is being recompleted for oil in an upper section. Casing has been ripped in Wewoka sand between 1847 and 1858 feet. Initial production was 50 barrels on swab with large volumes of salt water. Operators are continuing swabbing and testing.

Four tests are at various stages in South Braman pool of Kay County, northern Oklahoma. E. I. Shaffer's Onstott 1, SE SW NE 17-28-1w, which failed to find production in Wilcox sand is to plug back to test shows encountered higher in the hole. Ohio Oil Company and Helmerich & Payne, Inc.'s Wilbur 1, NW NE NW 21-28-1w, south offset to the discovery, flowed 116 barrels of oil through tubing and will be completed at 3665 feet in Wilcox sand. The same operators are completing rig for Wilbur 2, NE NW NW 21-28-1w. A wildcat south of the pool, Atlantic Refining Company's Watson 1, SEc NW 28-28-1w, is drilling shale and sand below 2200 feet. The three producers in the field have a daily potential of 5800 barrels, with daily pipe line takes averaging about 200 barrels.

The last well in the deeper section of the Fox-Milroy area of the Ardmore Basin to reach the lime pay is Gulf Oil Corporation and Carter Oil Company's Lester 1-7, C NW NW 35-2s-3w. Early tests were not encouraging but after cleaning out the hole with gas pressure and re-acidizing, the test flowed 418 barrels of oil and 25 barrels of water in 19 hours with 18,000,000 cubic feet of gas. The last acid treatment was of 10,000 gallons, bringing the total used on the well to 41,000 gallons. Hole is bottomed in Oolitic lime at 8134 feet.

In the same field there are four tests drilling. Gulf Oil Corporation's Empire 1, CSE SE 27-2s-3w topped the Viola lime at 5438 feet and still is in this formation at 5568 feet. Franklin 1, CNW SE 27-2s-3w is washing down hole above 5168 feet, and Garrett 8, CNW NE 27-2s-3w, is drilling Viola lime at 6874 feet. Magnolia Petroleum Company's Hefner-Mills 1, CSW NE 27-2s-3w, the more shallow of the present tests, is going through lower Woodford shales and sand streaks at 5000 feet with the top of the Viola expected high. Both this and Empire 1 are said to be running higher than completed producers.

The eighth well has been completed in Frederick pool of lower Tillman County, only a short distance north of the Texas line. Indian Territory Illuminating Oil Company and Foster Petroleum Corporation's Copeland 1, NEc SW 1-3s-19w flowed 293 barrels of crude cutting more than 20 percent salt water with hole at 3351 feet in Canyon lime. Acid has been used on all wells. Copeland 1 brings the daily production to about 1000 barrels per day. Approximately 600 acres have been definitely proven productive although the structure is considered of greater area. Indian Territory Illuminating Oil Company and Foster Petroleum Corporation have all acreage considered favorable on the structure, which was located by seismic control.

Saturation in Hughes Wildcat

Phillips Petroleum Company's Mandler 1, SE SE SW 1-6n-10e, four miles northeast of Calvin in Hughes County is an important wildcat operation on one of the numerous structural highs of the region, and has drilled into a possible sand pay at 2857 feet. A core was taken between 2873 and 2883 feet with an 8½-foot recovery of sandy shale showing fair saturation. A thorough test of the stratum will be made before deepening. Some gas production has been obtained about four miles west of the test, while nearest crude

is produced from Calvin field, 10 miles southwest.

Re-development is continuing in the older St. Louis area with some 12 tests now underway either drilling or recompleting. Wildcatting has dropped to a low ebb despite the fact that there was a slight increase in this activity during the two past weeks. The majority of exploratory operations are being confined strictly to major trends. Lease blocking is continuing in Oklahoma's western basin, largely as a result of seismic work, although no stakes have been driven on the prospects.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Barton—		
Shell, Hoffman "A" 8, nw se nw sw 7-16s-13w	228	3365
Stettinger 3, swc se 1-16s-14w	2422	3334
Putman 1, sec sw 3-17s-13w	1016	3396
Magnolia, Muller 5, se ne ne 1-18s-11w	1605	3249
Stanolind, Rose 3, 100 ft n of cwl sw se ne 3-20s-11w	273	3311
Lario and Atlantic, Reiser 1, se ne nw 23-20s-11w	606	3306
Coffey—		
McGinnis, Peak 1, swc se 16-23s-15e	20	1533
Cowley—		
Brewer, Joslin 1, nw se sw 16-30s-4e	*	2871
McKnap, Byers Land Co. 1, se ne nw 21-32s-5e	724	3064
Ellsworth—		
Continental et al, Gray 1, sw se se 26-17s-8w (pb 3215 ft)	*	3307
Transwestern et al, Daugherty 1, sec ne 32-17s-10w	1102	3275
Finney—		
Atlantic Refg. Co., Numm 1, c se ne 27-21s-34w	604	4718
Greenwood—		
Braden et al, Dalton 1, c se ne 11-24s-12e	15	1751
McPherson—		
McPherson Drlg. Co., Ostlind 1, c ne se 10-19s-2w (pb 2939 ft)	16	3041
Lario, Suffield 2, swc se 25-19s-2w (pb 2994 ft)	108	3394
Continental, Boechner "A" 4, nwc sw 28-21s-1w	506	3352
Pratt—		
Atlantic, Luders 1, nw sw ne 11-27s-13w	795	4319
Rice—		
Shell, Zajic 9, nw se ne 13-18s-8w	2788	3227
Skelly, Voakland "B" 5, ne se nw 5-18s-10w	803	3007
Shell et al, Piehler 1, nwc 14-19s-9w	1110	3279
Stapleton et al, Layton 1, se sw nw 29-19s-9w	753	3246
Rush—		
Morgan & Flynn, Dirks 1, cwl nec 35-18s-16w	*	3630
Russell—		
Lauch & Moncrief, Miller "A" 3, sw se nw 29-13s-14w	*	3365
Mid-Continent, Letsch 4, sw se nw 26-14s-13w	892	2869
Stanolind, Boonson 4, ne nw se 20-11s-15w	606	3106
Shields, Letsch 6, nwc se 27-14s-13w	1808	2904
Polcyn Bros., Polcyn 3, nw sw se 10-14s-15w	1398	3255
Southern, Weimister 1, nec nw 3-15s-13w (pb 2984 ft)	*	3300
Stafford—		
Magnolia Pet. Co., Gates 3, nw ne ne 34-21s-13w	1273	3664
Republic Natural Gas Co., Hart 1, nw sw se 20-22s-11w	242	3629
Stanolind, Fuller 3, ne se sw 11-24s-11w	1140	3771
E. H. Moore, O'Haver 5, ne se sw 13-24s-11w	549	3812
Pure, Krey 9, sw ne se 14-24s-11w (pb 3802 ft)	927	3806
Stanolind, Martin 3, ne se nw 14-24s-11w	1132	3818
Martin 4, se ne nw 14-24s-11w	1290	3805
Woodson—		
Woodson Pipe Line & Prod. Co., Campbell 2, cwl ne nw ne 7-24s-14e	5	1726
Bunch, Boyd 1, ne nw ne sw 28-25s-14e	*	1445
Young, Lauber 7, sw se se 21-25s-15e	10	1507
Natan et al, Hassenpflug 1, nw ne ne 2-26s-14e	*	1574

*Failures; †Junked; ‡Million cu. ft. gas.

Kansas Field Developments

Reworking Crowley County gas area uncovers oil showing. South Gurney and Bloomer get production extensions.

Wichita.—A new pool for Kansas resulted from a completion of the week in the reworking campaign under way in Cowley County. G. M. Smith and Pryor & Lockhart's Wilson 2, NE NW NW 9-33-6e, four miles southeast of Turner pool in an area generally productive only of gas, has tested for 50 barrels per day from Arbuckle lime. The hole filled 2500 feet with oil in 5 hours when the pay was first tapped. Total depth is 3518 feet. Wilson 2 is one half mile north of a previous test drilled by the same operators which gained only a show in Mississippi chat, and which has since been abandoned. In the same county an east offset to the discovery of Dunbar pool is preparing to spud. Production in Dunbar is from Kansas City lime. Cable tools are being used in the test.

An edge location on the Pratt County side of Cunningham pool, the southwest extension of which produces gas from Viola lime, looks like an extension to the oil section of the field. The well is Skelly Oil Company's Moore 2, CSL SW 25-27-11w, which drilled to 3484 feet in Kansas City lime. At this depth it filled 1100 feet with oil in 7 hours, the flow being accomplished by considerable gas.

Quarter mile extensions have been gained for South Gurney pool of Russell County and for Bloomer. The latter extension made the Bloomer into a three-county pool, including Barton, Ellsworth and Rice. According to geologists the pool is expected to show a continuation of Stumps-Habiger production. The well extending the area is Gulf Oil Corporation's Ames 1, NWc 6-18-10w, which made 2098 barrels from 3244 feet in Arbuckle lime. A minor extension as well as a dry hole featured field activity in Cowley County the past week when The Texas Company's Beeman 2, SE SW SW 33-31-3e filled with water from Arbuckle lime at 3325 feet. The failure is on the west side of the prolific field. The same company's Wilson 2, southwest of production, encountered a more encouraging show in the formation at 3219 feet and tested for 1790 barrels daily.

E. B. Shawver and Gilmac Oil Company's Warr 1, CSW SW 13-34-2e, a try to extend production on the Padgett area of southeast Sumner County to the south, entered the failure column during the week when it failed to show in Arbuckle at 3830 feet. At a plugback depth of 2915 feet another test was made in Kansas City lime. This likewise failed to produce.

Skelly Oil Company is nearing important depth in Kipp 1-D, NEc SE 27-25-14w, Kipp field of Stafford County. The Kansas City-Lansing section was had at 3704 feet and the hole is past the 4000-foot marker at this time. Kipp and the Jordan area are on the extreme western flank of the south nosing from the Central Kansas Uplift. The same operator has completed a new producer in Letsch pool of Russell County. Colliver 2, CNL SE 28-14-13w received a potential rating of 1338 barrels from 2903 feet in Kansas City lime.

Long, Johnson and Brouk's Everleigh 1, SWc NE 3-18-14w, a wildcat test southwest of Hoisington in Barton County has cleaned up a fishing job at 2550 feet and is drilling below 2700 feet. This location is east of Otis gas field on a structure located by surface geology. Nearest oil production is in Hoisington pool, 4½ miles northeast.

Four wildcats are drilling in the off-trend areas of the state. Ramsey Petroleum Company and Maybee's Ryan 1, CNE SE 27-8-32w, near Halford, eastern Thomas County about 60 miles in from the Colorado line is below 4000 feet. The well ran into a fishing job now being cleaned up preparatory to deepening. In southwest Meade County Cragin, Reeuscher & Turner's Adams 1, NWc SE 22-34-30s is at shallow depth with rotary tools. Nearest production to the stake is in the gas area west of Liberal, while nearest oil production is in Morrison pool of northeast Clark County, 50 miles north and east. In Pottawatomie County, northeast central section of the state, Turner et al's Unshide 1, CNE NW 32-8-9e, 10 miles northeast of Manhattan, is below the 1500-foot marker. This test is east of Nemaha Ridge and could be important in giving some control of that prospective area. Babcock et al's Copeman 1, SW SE 7-10-2w, east of Minneapolis in Ottawa County is a try in the heart of Salina Basin. It is below 2600 feet. Another test in the Basin that is a stake at this time is Central States Oil Company's Crawford 1, NW SW NE 26-13-3w, a short distance northwest of Salina, Saline County. The operation is on a block of 5500 acres obtained from Carter Oil Company, and is spudding.

Five Tribes lease sale scheduled for November 7

Tulsa.—An auction sale of mining leases for the Five Civilized Tribes will be held November 7, at the office of the superintendent, Muskogee, Oklahoma, beginning at 10:00 a. m. Land in 15 counties will be disposed of to highest bidder as follows: Carter County, 2-tracts; Coal County, 1-tract; Creek County, 10-tracts; Garvin County, 3-tracts; Hughes County, 5-tracts; Love County, 2-tracts; Murray County, 4-tracts; Muskogee County, 1-tract; Nowata County, 3-tracts; Okfuskee County 5-tracts; Okmulgee County, 3-tracts; Pittsburg County, 1-tract; Pontotoc County, 2-tracts; Seminole County, 5-tracts and Stephens County, 3-tracts. A total of 3911 acres are being offered in 50 individual tracts.

West Texas Fields

Emma northwest extension well fails to flow naturally.

Garza County deep test moving in pipe to test up the hole.

Midland, Texas.—The trend of production to the northwest of the Emma pool, most active Andrews County area, appears less favorable for important extensions since an outpost in this direction failed to develop natural flow after multiple acid treatment. Superior Oil Company's University 1, SEc Section 35, Block 10, separated from production by a vacancy strip, was producing 50 to 75 barrels of oil daily on input gas after 3-stage acid treatment with 7000 gallons. Saturated lime was logged at 4185-4227 feet, with an elevation of 3176 feet. It is slightly lower on structure. The absence of flowing production may be due to poor porosity of the lime.

Rogers et al's University 1, southern Andrews County wildcat listed last week as flowing sulphur water at 4539 feet, or 1390 feet below sea level, has plugged back to 4375 feet to acidize. H. C. Wheeler et al's White-Shelton 1, wildcat on the west flank of the Means field, logged oil show at 4560-68 feet, with an elevation of 3207 feet, and was coring at 4600 feet. It is due to reach a decisive depth within 50 feet. The Texas Company's University 1-H, wildcat located south of the Shafter Lake area, was drilling hard lime at 4225 area, Tripplehorn Bros. et al's Thornberry 1, south outpost for the Deep Rock pool, logged increased oil show at 4300-25 feet, and was drilling at 4400 feet.

Prospects for a mile southwest extension for the Bennett field, Yoakum County were enhanced when John Mabee et al's Willard 1, NE NE NW Section 741, established a high structural position in logging top of anhydrite at 2340 feet, or 1216 feet above sea level, with drilling under way at 2400 feet. It is higher structurally on this upper marker than the nearest producer. Shell Petroleum Corporation's Rutts 1, located 1¼ miles southeast of the field, maintained its relatively high structural position in logging top of Yates at 3190 feet or 354 feet above sea level, and was drilling at 4300 feet. Completions of producers by these outposts will greatly influence drilling in the area. Heretofore development has moved out cautiously from production and all operators are drilling their inside locations simultaneously.

Pipe line congestion is an immediate threat for the Bennett and Wasson fields, which are dependent upon a 6-inch carrier built one year ago by Humble Pipe Line Company to its Hobbs, New Mexico, main line station. The two fields currently have base allowable of 13,779 barrels daily. The line also handles crude trucked from other fields in the upper basin. New leases registering production may be denied connection as a preliminary move towards the introduction of pipe line proration. No additional pipe line outlets are projected for the immediate future. Shell Pipe Line Corporation may be a prospect, with an extension from its New Mexico system, as its producing affiliate is a major producer at Wasson, and is confronted with considerable development work in the Bennett field.

Gulf Oil Corporation is reported to be moving in a string of 7-inch pipe to make a series of production tests in oil-saturated lime zones passed up in drilling its Swenson Ranch Ordovician project in northeastern Garza County. The test is drilling in hard lime at 7945 feet, and may halt after fulfilling a 8000-foot depth contract. The pipe will be perforated opposite the oil shows. Geological markers have not been made public, but cores have been preserved on all formations penetrated below the depth of other Permian tests in the general area. It is the first deep test in the northeast portion of the Permian Basin.

Magnolia Petroleum Company's Sealy 11, south offset to a lower sand producer in the Magnolia-Sealy pool, Ward County, flowed 65 barrels of oil in 6 hours natural at 3069 feet. Rig has been skidded to drill an east offset. The east border of the pool was partially defined when Gulf Oil Corporation's O'Brien 100 was plugged at 3120 feet. The upper and lower pay was missing. The Estes field, Ward County dual pay area, contributed two large wells the past week. Based upon 6-hour proration gauge, Gulf Oil Corporation's Estes 107 was rated at 2760 barrels of 34.1 gravity oil after nitro shot at 2520 feet. Westexas Oil Royalty Corporation's University 4-C topped this with a rated flow of 3608 barrels after shot at 2670 feet.

WEST TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Crane County (Gulf-McElroy)—		
Gulf, McElroy 181	1365	2895
Crane County (McCamey)—		
Ted Keith-Sindorf-Stone, King 1	519	2166
Texas Co., R. King 42	*	2635
Crane County (Sand Hills)—		
Aloco Oil Co., Tubb 1-A	305	4504
Ector County (Foster)—		
Broderick & Calvert, Witcher 5	1745	4220
Humble, F. A. Henderson 1	185	4325
Ector County (Goldsmith)—		
Atlantic, T.P. Land Trust 7-C	249	4295
Phillips-Pure, Cowden 42	1033	4183
Ector County (Harper)—		
Amon Carter-John Naylor, Parker 7	819	4276
Gulf, J. E. Parker 4	51	4250
Shell, E. F. Cowden 16-B	843	4280
Wentz et al, T.P. Land Trust 3-B	2460	4183
Ector County (Jordan)—		
Shell, University 3-D	1653	3638
Gaines County (Wildcat)—		
Atlantic et al, Parker Bros. 1	*	5290
Hockley County (Slaughter)—		
Gulf, Mallett 2	200	5090
Jones County—		
Danciger, Edmonds 2	142	1950
Humble, R. Graves 1	1200	2871
Sandy Ridge Oil Corp., Steffins 2	351	1898
Pecos County (Masterson)—		
Street et al, Fromme 1-a	336	1455
Pecos County (Pecos Valley)—		
Peerless O&G Co., Pecos Valley 2	3	1708
Pecos County (Yates)—		
Standard of Texas, Smith 9	360	1495
Pecos County (Wildcat)—		
Helmerich - Payne, Inc. - Wright & McMillen, Puckett 1	*	3502
J. H. Reeves-K. Kimberlin, Young-Humble 1	*	1850
Reeves County—		
Pacific - Mid-Continent Corp.-Frankley & Rice, Tunstill 1	¶3¾	3305
Upton County (McCamey)—		
Cordova-Union Oil Corp., Fee 10-A	241	2074
Ward County—		
Daniels & Pardue, Hardage-Wilson 1	25	2451
Falls Oil Co., Johnson 2	363	2015
Gulf, Hutchings 113	618	2750
G. W. O'Brien 100	*	3120
Winkler County (Emperor)—		
Phillips, McCabe 6	1425	2957
Winkler County (Kermit)—		
Magnolia, Walton 185	550	3250
Walton 189	1763	2919
Walton 190	963	2920
Winkler County (Keystone)—		
Sharp et al, M. E. Crum-Sharp 1	65	3375
Yoakum County (Bennett)—		
T.P. Coal & Oil Co., Bennett 1	1892	5250
Yoakum County (Wasson)—		
Amon Carter-Continental, Willard 2	886	5020
Continental, Stevens 1	670	5047
Humble, Ed Randall 1	404	5160
Shell, Lowe 5	902	5055

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS PANHANDLE Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Carson County—		
Magnolia, Fee 46, lse 44	182	2960
Gray County—		
Continental, Graham 2	499	3300
Kewanee Oil Co., McKinney 9	395	3265
Wilma Pet. Co., McKinney 2	658	3276
Hutchinson County—		
Gibson Oil Corp., Jameson 1	362	2924
Huber Pet. Co., J. F. Weatherly 4	¶110	2897
Mid-States Oil Corp., Whittenburg 21-A	766	2971
Phillips, Kay 3	354	3225
Thompson 8	436	3165
Stansylvania Oil Co., Wisdom 3	710	3116
Moore County—		
Phillips, Powell 1	¶53	3180

*Failures; †Junked; ¶Million cu. ft. gas.

Oil industry has highest weekly wage in Texas

The Texas oil industry offers the largest employment opportunity for young men willing to start at the bottom of the ladder and not afraid of hard outdoor labor, it is concluded by the National Youth Administration in a report on the job outlook in that state, released at Washington, October 19.

Unconsciously meeting criticisms recently voiced when it was reported by the Social Security Board that one fourth of the nation's workers are women, the survey points out that oil is man's industry and offers little or no opportunity for women except in clerical positions.

"Good health, a strong back, an alert mind and a public school education," it stated, are the essential requirements for employment. Entry upon employment is at the bottom of the industrial order, and promotion is most likely for those who stick with one company.

In Texas, the survey found, the oil industry during recent years has created annually at least 25,000 new temporary or permanent jobs, and expressed the opinion that the industry may be expected to continue operating there for many years, with no indication at this time of a reduction in either operations or employment.

Of particular interest is a section of

the report devoted to wage rates. Quoting Bureau of Labor Statistics figures for July and August, 1934, the survey shows that at that time the average weekly wage for all occupations in the production branch of the oil industry was $29.40; in transportation $28.60, and in refining $25.27.

Wages Higher Since 1934

Since then, however, it was pointed out, the weekly earnings for the production division have shown further increases, the bureau of business research of the University of Texas reporting that during the week ending nearest January 25, 1938, 8157 employees of 43 representative crude producing concerns earned an average weekly wage of $36.02. This was the highest weekly wage paid in any of the 33 industries tabulated, it was declared, newspaper publishing being second, with an average of $33.32, and petroleum refining third, with an average of $31.67.

"No other Texas industry has an average weekly wage per employee as high as $29.00," said the report. "Thus, the wage differential enjoyed by oil field workers of the state is clearly demonstrated."

This, it was explained, may result from the production of gasoline from bituminous coal through hydrogenation, a process that may create a real menace to the crude oil market, owing to the fact that gasoline can now be extracted from coal at an economically feasible cost, should there be a moderate rise in the refiner's price for gasoline.

"This indicates that the coal-mine operators may some day turn the tables upon the industry which seized the bulk of the bituminous market two decades ago, either as scarcity pushes gasoline prices up or as technology reduces the cost of the hydrogenation process or develops some less costly method," the survey commented.

Cooperating in the survey and the preparation of the report were offcials of the Federal and State National Youth Administrations, Harry C. Wiess, president of Humble Oil & Refining Company, and educators of the University of Texas.

Texas grants permits for 262 new tests

Permits for drilling 262 new wells in Texas were approved by the Texas Railroad Commission last week, 126 more than were allowed the week before.

Operators in the East Texas Field were allowed 50 new locations, including 26 in Rusk, 21 in Gregg, two in Smith and one in Cherokee County. From the remainder of the East Central Texas area eight locations were reported.

There were 43 permits approved in West Texas, including 13 in Ector County, while West Central Texas operators reported 20 locations.

The commission approved 65 permits in the Gulf Coast area with 15 in Harris County, while Southwest Texas operators reported 42 new locations, including 12 in Duval County.

North Texas operators were allowed 29 locations, including 19 in Wichita County. Panhandle producers reported five new locations.

North Texas Developments

Jackson-Canyon edge test results in 50-barrel pumper. K-M-A active drilling list has slumped to 71 operations.

Wichita Falls.—Drilling operations in the K-M-A deep area being maintained at a level comparable to other large producing fields within the state, although several months have elapsed since the big development program began subsiding. The current report on field activity accounts for 71 operations, including 17 tests in process of completion with rotary and spudders. Rotary rigs are in service on 15 tests drilling between casing points. The field was credited with 13 new authorizations the past week as compared to 8 locations the previous week.

K-M-A's drilling slump arose from the tightening of proration allowables and the failure of crude purchasers to expand their nominations adequately to absorb new wells. The unconnected well situation has been largely clarified, but to accomplish this the operators had to accept pipe line proration. Various promises of market relief from outside sources have failed to materialize.

Bottom-hole water was encountered by Shappell Oil Company's Jackson 3-D, recent half-mile south extension made to the Jackson-Canyon pool, located on the Wichita-Archer County, when deepened to 2616 feet. Top of oil saturation in the Canyon was logged at 2611 feet. It is expected to make a 50-barrel pumper, with small volume of salt water. Previous Canyon completions in this pool have registered natural flows, averaging 500 barrels initial. Westmount Oil Company's Dempsey 7, ¾-mile northeast of Holliday, Archer County, has cemented 5 3/16-inch pipe at 4250 feet for a production test in broken sand-lime, carrying oil shows, logged when the hole was deepened from 4205 feet to 4616 feet. Top of K-M-A lime was logged at 4007 feet, indicating a low structural position when correlated with the K-M-A field.

Hull-Silk Area

The Texas Company's Wilson 34-A, southwest corner of Section 29, offsetting lower Strawn oil producers in the Hull-Silk area, which centers upon the depleted Panther shallow field, Archer County, encountered the oil pay at 4375-80 feet, and has cemented 7-inch pipe at 4375 feet. It will be the sixth completion for this horizon. Blackwell Oil & Gas Company and Helmerich-Payne, Inc.'s Wilson 2, Section 25, gauged 138 barrels of oil through tubing choke on 3-hour potential test. It is producing from perforated pipe at 4325-79 feet after plugging back from Ellenberger at 5120-5270 feet.

Adams Oil & Gas Company, discoverer of a Strawn oil pool in eastern Archer County last June, is reported to have contracted to drill a deep test one mile southwest of Archer City on acreage, centering upon Blocks 152, 157 and 158, Harris Subdivision. This company's G. Moer 1, which established pumping production one mile east of Scotland after plugging back from 4165 feet to 4148 feet, will be restored to steady production. It has been idle for several months while adjusting titles.

Youngblood & Foree's Burnett 1, Montague County wildcat situated one mile west of Nocona, logged oil saturation in 10-foot section of broken sand and shale, topped at 3387 feet, and was drilling at 3990 feet.

Contract for the drilling of a 6000-foot wildcat in southeastern Grayson County has been assumed by L. T. Barton and E. F. Strube in selling protection acreage from their block. Location has been assigned to the M. E. Williams 126-acre lease, S. Nix survey, A-908.

Bolivar Drilling Company's J. P. Knox, 4, several locations northwest of gas production in the Bolivar pool, Denton County, is running pipe for a production test of sand at 1681-90 feet, which showed oil and gas, according to cored samples.

Texas withdraws lease sale of state lands

Following an unusual procedure, Land Commissioner W. H. McDonald withdrew from the market submerged state lands which were to be leased on November 10.

Equally unusual was the procedure which caused McDonald to follow this course. He had a conference with Governor Allred, Senators John Redditt, Vernon Lemens and Morris Roberts and A. M. Aiken, members of the State Teachers Association and others.

In this conference the land sales were discussed, and immediately thereafter Governor Allred issued the following statement:

"At the request of Senators John Redditt, Vernon Lemens and Morris Roberts and A. M. Aiken, as well as a committee of the State Teachers Association composed of H. L. Mills of Houston, R. H. Brister of Waco, Mr. Long of Crockett, Mr. Garner and J. O. Loftin of Kingsville, meeting in the office of Governor James V. Allred—Land Commissioner W. H. McDonald has called off proposed leases of several tracts located in Aransas, Cameron, Chambers, Galveston and Nueces Counties.

"McDonald stated to the group that he thought there was danger of drainage in only one district, Petronila Creek in Nueces County, where production has been secured about 1000 feet away.

"Governor Allred took the position that this creek bed probably was under the jurisdiction of the State Board of Mineral Development and McDonald agreed there was some question about it. He stated it had been submitted

to the Attorney General but the Attorney General had not yet made a ruling.

"McDonald said if the Governor would call a meeting of the State Board of Mineral Development to ask for bids on Petronila Creek he would be glad to call off all of the sale, and the Governor agreed to call the meeting and that the Land Commission as well as the Board of Mineral Development would ask for bids on the Petronila Creek.

"McDonald further stated that he had no intention of putting any other lands up for leasing during the remainder of his term. He was complimented by all of the representatives of the State Teachers Association present as well as by the four State Senators and by the Governor for his decision."

Subsequently, McDonald stated that Petronila Creek was the only tract which was likely to be seriously drained. Bids on this tract will be received December 1, the Land Commissioner announced.

NORTH TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County (K-M-A)—		
Staley et al, Mangold 6, blk 30	600	3857
Archer County—		
Burns et al, McCrory 15-A, blk 75	10	1406
Fraser & Proctor, Langford 2, blk 135	*	2285
Omohundro et al, Thurman 1	175	975
Thurman 2	193	998
Panhandle et al, Prideaux 2	*	3266
Clay County—		
R. I. Carter et al, Wolf 1, sec 9	*	1627
Duncan & Arnhold, Duncan 3	133	1154
Gray & Thweatt, Enyart 5, blk 7	*	300
Norwood et al, Stephenson 1, blk 3	*	400
Cooke County—		
Big Indian O&D Co., Alexander 1	*	2222
Richards et al, Rhomer 1, blk 16	*	1750
Seitz-Comegys & Seitz, C. A. Willis 1	*	2414
Texas Co., Trubenbach 14	50	778
Jack County—		
Mar-Tex Oil Co., Kuykendall 6-B	163	3217
Rogers & Spoonts, Shown 1	*	390
Sewell et al, Sewell 4	*	348
Wichita County (K-M-A)—		
Board of Mineral Dev.-G. W. Drlg. Co., Big Wichita River 1	840	3759
Burk Roy Co., Owenby 3	720	3998
King Oil Co.-Perkins-Cullum, Pettit 4	736	3820
Pettit 5	880	3826
Pettit 7	960	3776
Moran Bros., Inc., Waggoner Bros. 1-M, blk 6	800	3874
Petroleum Prod. Co., First Nat'l Co. 91, blk 28	928	3882
Ray et al, Waggoner Bros. 2-A, sec 8	920	3792
Shell, Kempner 4, blk 17	114	3878
Kempner 5, blk 17	1138	3876
Kempner 6, blk 17	2000	3874
S. K. Vierson-A. D. Cochran, Wigley 3-A	1080	3904
Wichita County (Jackson-Canyon)—		
King Oil Co. et al, Rathke 2, sec 20	960	2635
Wichita County—		
Fitzwater et al, Seals 2	*	670
W. W. & W. F. Houston, Oates 1	1	260
Karstetter et al, Warren 4	*	585
Owens Oil Co., Hines 2, sec 11	10	514
Rathke Oil Co., Murray 16	2	870
Sutterfield et al, Boyd 1, blk 12	*	692
Wise County—		
Layton et al, Morrow 1	*	375
Young County—		
Brazelton Bros., Barnett 1, sec 187	*	1114
Brazos-Young Corp., Wray 1	659	4257
Bullock et al, Johnson 1, sec 334	*	819
Craig et al, Siebold 1, sec 65	*	1086
Glover et al, Johnson 21, lot 10	4	580
Lennon et al, Drum 1	12	555
Long & Wolfe, Cearley 1, sec 1984	13	4255
Sieboldt Dri. Co., Crawford 1, sec 623	600	3967
Taylor et al, Farmer 1	*	780

*Failures; †Junked; ¶Million cu. ft. gas.

East Texas Developments

Plan immediate test to Trinity in upper Woodbine area. Cayuga well making 200 barrels distillate on experiment.

Tyler, Texas.—The search for lower Trinity production in the Woodbine belt of East Texas will include a test in the upper basin region. George Strake et al are weighing contractors' bids for the drilling of an 8500-foot project in northwestern Wood County on a block of 6000 acres assembled since mid-summer. Location is reported to be slated for the W. G. Farrier tract, Jesse Walker Survey, 3¾ miles east of Yantis. Greater portion of the drilling block represents acreage farmed out by Atlatl Royalty Corporation for a Trinity test and a substantial oil payment.

Tide Water Associated Oil Company et al's S. S. McGee 1, third lower Trinity test for the Opelika area, Henderson County, has rigged up heavy rotary. Recent completion of gas-distillate wells in Gregg County and the Cayuga field in the lower Trinity temporarily concluded deep drilling in the Woodbine belt. Roeser & Pendleton, Inc.'s Bowyer 3, third deep gas-distillate well in the Cayuga area, began a 15-day experimental production test October 17, and is injecting 3,500,000 feet of gas daily into the company's Bowyer 1, a Woodbine sand oil well on the same property. Approximately 200 barrels of 65-gravity distillate daily is being produced with the gas. A permanent gas re-cycling plant, or a natural gasoline plant will likely be erected by the company.

T. J. Tucker et al's Sam Vane 1, 1¼ mile north outpost for the Buffalo gas-distillate field, Leon County, is to plug back and perforate casing opposite the top section of the Woodbine sand, topped at 5503 feet after developing water from perforations at 5576-82 feet and 5534-44 feet.

The natural gas output of the Hunt Oil Company's S. H. Bradley 1, gas-distillate discovery in the lower Glen Rose for the Chapel Hill pool, eastern Smith County, is being distributed among the company's pumping leases in the Joiner section of the East Texas field. John W. Lee, trustee for the H. L. Hunt Interests, constructed 8 miles of 6⅝-inch line from Chapel Hill to Overton, and 7 miles of 5½-inch line from the latter point to the Wright City sector to supply fuel to the W. P. Moore, Fair "B", "C" and "D" leases. The deep wildcat is currently yielding 52 barrels of high gravity distillate daily which is separated from the gas at the well and delivered by tank truck to Sun Pipe Line Company.

Humble Oil & Refining Company is reported to be buying right-of-way for a natural gas pipe line to extend from its two lower Trinity gas-distillate wells on the east flank of the Gregg County section of the East Texas field to the company's natural gasoline plant near Kilgore.

Uniform Cayuga potential tests sought at hearing

Uniform potential tests in the Cayuga Field were sought at a hearing before the Texas Railroad Commission last week. The hearing was held at the request of Clark and Cowden, whose representatives pointed out that while potential tests on flowing wells must be taken on an eighth inch choke commission regulations did not specify the length of this choke.

Gordon Griffin, petroleum engineer for Clark and Cowden, urged the commission to provide an order that would require the use of an eighth-inch positive choke three inches long, with suitable correction for a quarter-inch choke.

Operators at this hearing likewise agreed to continue proration on acreage and potential, as provided in commission orders which have been in effect for several months. On October 1, the commission revised its Cayuga schedule and prorated

EAST TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
Humble, Wheelis 26 (168.3-ac)	4800	3741
Wooley 37 (201.53-ac)	7500	3698
Hunt Oil Co., Wooley 14 (53.15-ac)	192	3735
Stanolind, Mason Bros. 16 (108.24-ac)	2000	3636
Kilgore Area—		
Everts Drlg. Co., Beasley 3 (22-ac)	2000	3836
Gulf, Alexander 37 (209.01-ac)	8000	3550
Shell, Bates 24 (64.96-ac)	6500	3619
Sinclair Prairie, Kennedy 14-B (52.44-ac)	1200	3745
Tide Water Associated, Lacy 17 (80-ac)	7600	3560
Travis et al, Still 4 (18-ac)	192	3560
Longview Area—		
Atlantic, Harris 19 (91.94-ac)	5800	3535
Gen'l American Oil Co., Sanders 24-A (73.65-ac)	6000	3619
Gulf, Fishburn 31 (200-ac)	9600	3485
Humble, Edwards 45 (271.6-ac)	7000	3690
Magnolia, Ziegler 23 (114.73-ac)	6700	3447
Shell, Landers 27 (98.55-ac)	4500	3738
Landers 10 (33.6-ac)	5000	3723
Richey 36 (167.38-ac)	8500	3668
Stanolind, McKinley Bros. 60-B (57.91-ac)	8000	3669
McKinley Bros. 65-B (84-ac)	7700	3692
Franklin County (Talco)—		
Humble, King-Hughes 58 (1053.36-ac)	149	4316
Magnolia, Maxton 9 (326½-ac)	114	4231
Henderson County (Flag Lake)—		
DeArman et al, Tarkington 1	56	3056
Texas Co., Tarkington 1 (50-ac)	85	3025
Leon County (Buffalo)—		
Lone Star Gasoline Co., Pate 1	¶115	4782
Titus County (Talco)—		
Humble, King-Hughes 62 (1053.36-ac)	215	4180
Freestone County—		
Shyrock et al, Clark 1, (122-ac)	*	4145
Henderson County—		
High Point Oil Co., Peavey 1	*	3425
Houston County—		
Mayo et al, Warroch 1 (106-ac)	*	5890
Cass County (Rodessa)—		
Bateman Dr. Co., Jaynes 1, A. Douthette sur	*	6505
Marion (Jefferson-Rodessa)—		
Hollandsworth Dr. Co., Davis 2, Wm. Smith sur	300	6026
Shell, Fant 1, A. D. S. Coy sur	97	6004
Texas Co., Braden 1, Fitzgerald sur	195	6006

*Failures; †Junked; ¶Million cu. ft. gas.

wells on acreage and per well. No explanatory order was issued, but it was understood this plan was favored by the Tide Water Oil Company.

At the conclusion of the meeting, commission officials stated that no change in the method of allocation would be considered this time.

Cayuga repressuring permit is sought

The Texas Railroad Commission has scheduled for November 3, a hearing on an application to repressure the Woodbine Sand in the Cayuga field with gas taken from the Trinity Formation. The application has been filed by Roeser and Pendleton, Inc., of Fort Worth. Similar permits have been granted to Tide Water Associated Oil Company for operation in this field.

Apply for East Texas salt water disposal permit

An application of Sun Oil Company for an East Texas salt water disposal permit has been set for November 5, at Austin by the Texas Railroad Commission. The application filed by the Sun indicates that it proposes to return the water through one of the wells on its H. A. Pace lease in the Vargas Survey, Smith County.

The plan, however, has one unusual feature in that this well may be a disposal well for water produced on several tracts. In the past applications have provided for the return of water produced from the lease on which the input well was located.

Commission fixes hearing to discuss report forms

A hearing to dicuss Railroad Commission forms has been scheduled for November 28, at Austin. At this meeting, the commission will discuss the results obtained by a special committee of the Mid-Continent Oil and Gas Association, which has made a detailed study of these forms in an attempt to eliminate duplications and require fewer reports.

Southwest Texas Fields

Lower Coast has new sands, extensions in several fields. McCampbell extension may involve Aransas Pass townsite. Jackson County showing opens third new area this year.

Corpus Christi.—Nueces, San Patricio, Jim Wells and Refugio counties shared in new sand discoveries and important extensions during the past week, all new producing sands being in the Frio zone. At the same time, Jackson County was receiving its third oil field for 1938.

Casing was set for production tests of The Texas Company's J. F. Weed 1, John D. Newell Survey, and five miles east of La Ward, Jackson County, the test was drilled to 7820 feet, having encountered numerous shows higher in the hole. A drill-stem test at 7062-76 feet had recovered 150 feet of mud cut with distillate, 420 feet of a 1000-foot water cushion, and developed 2770 pounds pressure in 10½ minutes. Test from 7360-80 feet recovered 125 feet of distillate and heavy gas pressure.

A townsite drilling program is in prospect for Aransas Pass as a result of Frank Grote's one mile southwest extension in the McCampbell field's regular 7100-foot producing horizon. The San Patricio County test is within ¼ mile of the city limits of the townsite, and geological information suggests that production will extend beyond that line. The well flowed 110 barrels of 41 gravity oil in 12 hours through 3/16-inch choke, perforations being made at 4127-33 feet in 5½-inch casing set on bottom at 7143 feet. Sand had been cored from 7111-43 feet. As a result, rules have been promulgated to allow the drilling of only one test to every four blocks. The royalty would be divided into 1/64 of the ⅛ for holder of each lot.

La Rosa field of Refugio County was being extended one mile to the east while new sand was being opened. Rutherford Oil Company's H. A. Schirmer 1 was being gauged through casing perforations at 6323-26 feet, after drill-stem test at that level, in 7 minutes developed 400 pounds pressure, no water, through ¼-inch bottom and ⅜-inch top chokes. Oil sand was cored at 6323-38 feet and salt water sand at 6338-42 feet. Seven-inch casing was set at 6396 feet after hole was carried to 6513 feet.

East of this well, The Austin Corporation and J. W. Heard have abandoned N. S. Hunsdon 1, Block E, after drilling to 7023 feet. The test topped the Tomoconnor sand at 6262 feet, but had no showings. It was high on this zone, which may lead to the drilling of at least one more test on the Bonnie View-Woodsboro prospect, also in Refugio County.

Jim Wells County contributed its usual bit of new development with one new sand being opened and another sand, previously discovered, placed on production for the first time. Gauge was being made in Southern Minerals Corporation's Stillwell 1, Block 17, on the west side of the Alice field. It found a series of sands at 5425-52 feet in the Vicksburg and was completed through perforations 5441-51 feet. R. B. Bryant's Rattan 2, Block 13, after making salt water in the 5300-foot zone, plugged back and was completed at 5031-37 feet, where casing was perforated. It flowed 100 barrels of oil in 12 hours through 3/16-inch choke, pressures being 75 pounds on tubing and 750 pounds on casing. This Frio sand was present in a number of wells, but due to offsetting

A span of mules and four-seater buckboard has been placed in service by Amerada Petroleum Corporation to transport lease workers in the Trinity River bottom section of the Cayuga field, Texas. The buggy contains, left to right, Dwight Outcalt and Albert Cook, roustabouts; Ralph Phillips of Longview, district superintendent for East Texas and apprentice mule-skinner; and Sam Bolin, Cayuga production foreman. Three miles of marsh land lies between the company's field camp and its H. Berk 1057-acre lease in the Freestone County portion of the field. Heretofore, the workmen have donned hip boots to negotiate this stretch of bad lands during the rainy season. Inspection trips by W. G. Ricketts, general production superintendent, Tulsa, and F. Wayne Covault, division superintendent, Fort Worth, who have frequently waded the mud flats, undoubtedly figured in the purchase of the iron-tired vehicle and the famous Missouri product.

program, no completions were effected. A twin well campaign may result.

In the Saxet area, Richardson Petrolem Company's Cain & Sechrist 24, south end of the field, was flowing about 150 barrels of distillate per day through 3/16-inch choke with 3200 pounds working pressure. No gauge has been run on the test, bottomed at 9927 feet, and deepest producer in South Texas. Also in the Saxet field, Hiawatha Oil & Gas Company's F. J. Smith 3, extended the former deepest pay 3250 feet to the southwest with a producer through perforations 7256-61 feet. It flowed 121 barrels per day through 1-inch choke under pressures of 35 pounds on tubing and 310 pounds on casing.

Another producing level for the Agua Dulce field, also in Nueces County, was assured with casing being set on sand 4666-75 feet in G. P. Shelton et al's E. H. Sands et al 1, Section 86. The test showed for a distillate well at this level. It is the shallowest Frio zone in the field to make distillate.

SOUTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
SAN ANTONIO DISTRICT		
Caldwell County—		
Lincoln, Withers 1, House sur.....	*	1576
Martell, Smith 3, Salt Flats.....	72	2704
Guadalupe County—		
Blackmar, Posey 2, Darst Creek....	*	lcn.
Hamill & Hamill, Zuehl 2, Duran sur	*	635
J. H., Forsage 1-A, Darst Creek....	*	2682
McCabe, Denman 2, Darst Creek...	*	lcn.
Nancy Lee, Wilson 1, Darst Creek..	35	2618
Medina County—		
Gaston, Rogers 1, Wilson sur.....	3	945
Kerr County—		
Starcke, Saul 1, sur 47.....	*	50
Travis County—		
Wolter, Johnson 2, Burleson sur...	†	680
CORPUS CHRISTI DISTRICT		
Bee County—		
Aid, Hall 2, Tulsita .....¶1 & 25		3598
Jim Wells County—		
Bryant, Rattan 2, blk 13, Alice (perf 5031-37)	500	5312
Howell, Lindsay & Reed 20, Alice..	500	5272
Magnolia, Seeligson 10, East Premont (perf 6132-38)	350	6602
Lavaca County—		
Ragsdale, Vanek 1, Woods sur....	*	1140
Live Oak County—		
Holland, West 2, Ragland sur.....	*	4356
Nueces County—		
Bartel, Lawrence 1, Saxet.....	550	4895
Conservative, Flinn 1, S. Clara Driscoll	550	5510
Hiawatha, Smith 3-A, Saxet.....	200	7338
Killam, Ellick 8, Clara Driscoll....	450	5492
Lockhart, Purl 2, Agua Dulce..¶1 & 30		4867
Simmons, Harrell 2, Saxet.....	†	1200
Southern Minerals, King 11, Richard King	430	4016
Stanolind, McCann 13, Luby (perf 5047-52 ft)	550	5133
Spessard 16, Luby.....	500	5055
Refugio County—		
Austin & Heard, Hunsdon 1, Lopez sur	*	7023
Copano, O'Connor 22-B, Tomoconnor 1300		5925
Cody & Heard-Austin, Peck 1, Lopez sur	*	6226
Geophysical, Spaulding 1, La Rosa	450	5920
Quintana, O'Connor 35-C, Tomoconnor 3000		5925
San Patricio County—		
Grote, Carlock 1, McCampbell Ranch subd	300	7143
Texas, Brigham 2, E. White Point..	450	5667
Victoria County—		
Barnsdall, McFaddin 9-A, McFaddin	¶10	3168
Seaport, Diemer 6, Heyser.....	400	5572
LAREDO DISTRICT		
Duval County—		
Cox & Hamon & Gorman-Yoakum, Cuellar 51, Hoffman	148	2851
Frohnhoefer, Fitzsimmons 1, Fitzsimmons	350	4366
Government Wells, Lundell 31, Lundell	125	1530
Humble, Rossi 7-B, North Sweden.	475	5350
Magnolia, Duval Ranch 1, (sec 48)	*	3390
Duval Ranch 1, (sec 205) Eagle Hill	25	1465
Duval Ranch 1, (sec 292) Casa Blanca	¶¼	1244
Well 17, Hoffman.....	225	2795
Porter & Wheelock & Collins, Fitzsimmons 2, Fitzsimmons	375	4398
Porter, Fitzsimmons 6-A, Fitzsimmons	350	4340
McMullen County—		
Barbara, Edrington 1, sec 79.....	*	3100
Graham, Nueces 9, Munson.....	120	1220
Mid-Western, Byrne C-2, Pittuck sur	*	1005
Schimmel, Hagist A-1, sur 125.....	*	1896
Webb County—		
Spice, Garcia 1, sur 592.....	*	2019
Zapata County—		
Gilcrease, Haynes 27-B, Comitas...	25	1085

*Failures; †Junked; ¶Million cu. ft. gas.

Valley area wildcats at testing stage

McAllen, Texas.—Rio Grande Valley was holding much attention late last week as several key wildcats were being tested, indicating new sands and key extensions to producing areas.

Sun Oil Company has set casing in Augustin Olivarez et al 1, about ¾ mile northwest discovery of Sun field, Starr County, and likely will complete in a new sand for the district. Oil sand was cored at 4605-21 feet, sand with gas odor and slight oil show 4836-51 feet, and oil sand 4901-11 feet. Drill-stem tests recovered salt water at 5111-35 feet, 5170-95 feet, and 5230-33 feet. Hole is bottomed 5242 feet. The company's Lydia Speer 1, one mile southwest Sun field discovery, and in Survey 274, was coring below 5720 feet, having found only water sands above.

Testing continued at Union Sulphur Company's American Rio Grande Land and Irrigation Company 11, deep Mercedes field test in Hidalgo County. Seven inch casing is set at 8417 feet, 5½-inch casing at 9618 feet. Numerous sets of perforations have been made in the 8600-foot zone, through all of which salt water and distillate have been recovered.

Samfordyce field, Starr and Hidalgo Counties, received a 1600-foot north extension and the opening of a new sand with H. C. Dean et al's Sheldon 1 completed through perforations at 2835-39 feet. At the close of the week the well was flowing around 10 barrels hourly of fluid, through ⅛-inch choke, under pressures of 700 pounds on casing, 200 pounds on tubing. Sheldon 1, Porcion 41, found gas sand 1780-1805 feet, oil sands 2700-68 feet, 2835-39 feet, and 2857-65 feet. Oil and salt water sand was found at 2925-60 feet, hole drilled to 3015 feet, and 5½-inch casing set at 2990 feet.

North extension to Samfordyce is indicated by Phillips Petroleum Company's Rafael Flores 1, Porcion 39, which continued to drill below the 9100-foot level. Gas sand was found at 8111-16 feet, and another reportedly at 8840-60 feet.

Segno order calls for 20-acre spacing

The Texas Railroad Commission has issued an order providing for 20 acre spacing for deep wells producing in the Segno field, Polk County. The order likewise provides for 2800 feet of surface casing, set with a minimum of 250 sacks of cement, and 350 sacks of cement on the oil string.

Wells are to be prorated on acreage and potential with 50 percent allocated on each factor. The 20 acre unit allowance may be increased to as much as 30 acres to avoid the necessity for drilling a well on fractional units.

Frio County Austin Chalk well gets series of tests

San Antonio.—Humble Oil & Refining Company's Shattel field, Frio County, discovery well was making a series of production tests late in the week. The well pumped 59.3 barrels of fluid of which 6 percent was wash water and 3 percent mud, in 5½ hours. Other gauges follow: the first day it pumped 128 barrels fluid 50 percent wash water in 6 hours; second day it pumped 59.3 barrels fluid, 6 percent wash water, 3 percent mud in 5½ hours. The well, Schley 1, is bottomed at 5309 feet, plugged back to 4800 feet where it is being completed in the Austin chalk topped at 4685 feet. It is located in J. Travalder survey No. 174, and is 2½ miles southwest of Shattel.

The well paves the way to considerable exploration in this area with blocks being taken by major and independent companies in Medina, Atascosa and Frio counties. Geophysical crews are working in the area.

Teas, Ashley and Hinton's Grizzard 1, was drilling plugs over the week end, from 4¾-inch casing set at 7152 feet. The well, on the Smithville prospect in Bastrop County, will test the Edwards limestone topped at 7023 feet, total depth being 7177 feet, plugged back to 7175 feet. It is in the Andrew Graham League, 9 miles south of Smithville.

Five and one-half miles northwest of Junction in Kimble County, Plateau Oil Company's Hunger 1, was preparing to drill plugs. The test bottomed at 1800 feet, set 7-inch casing at 1765 feet after bailing oil.

Ezzell Ranch

Laredo.—Edwin M. Jones and Harry Ezzell are continuing their program of development of the Ezzell Ranch in eastern McMullen County which is converting this into one of the large producing areas of the Mirando district.

Jones' Ezzell 40, one mile southwest of production, extended the field being completed through perforations in sand logged at 1526-34 feet for 150 barrels per day on pump. Jones' Ezzell 37, Vierro survey, is waiting on completion of pipe line before running gauge. It is to be completed through perforations at 1521-33 feet. Ezzell 41 was abandoned at 1562 feet after a drill-stem test at 1544-62 feet recovered salt water.

Harry Ezzell's Fee 24, Brewer survey, is drilling plugs from 7-inch casing set at 1565 feet to test oil sand at 1535-51 feet.

Wasson operating rules hearing is postponed

The Texas Railroad Commission has again postponed its hearing on operating rules for the Wasson pool in Gaines and Yoakum counties, and the Slaughter field in Hockley County. These hearings were scheduled for November 4 and have been delayed until November 17.

Schedule Goldsmith casing hearing

A hearing to consider a revision of casing rules in the Goldsmith field, Ector County, has been scheduled for November 9 at Austin. The Shasta Oil Company has complained that some wells in the field are producing excessive gas because casing has been set too high.

Texas Gulf Coast

League City, Galveston County, established as oil field.
Iowa Colony, Brazoria County, wildcat is a failure.

Houston.—Midwest Royalty Corporation's Lobit 1, Perry & Austin Survey, southwest of League City, Galveston County on potential test after casing was perforated with 39 holes from 9092 to 9106 feet, flowed 301 barrels of 42.3 gravity oil through a 9/64-inch choke, to open a new field. Tubing pressure was 1750 pounds and casing pressure was 1950 pounds. The gas/oil ratio was 1066 to 1.

North of the discovery well H. C. Cockburn made location for O. H. Haardt 1, 200 feet each way out of the southeast corner of lot 52 of the Braskaria Gardens Subdivision in the S. F. Austin Survey. Geo. H. Echols has made location for M. Stewart 1, 466 feet south of the north line and center of the east and west line of a 100-acre tract in the Perry & Austin Survey, Abstract 19.

Considerable leasing has taken place within a 1½-mile radius of the well. Phillips Petroleum Company is closing a deal with Midwest Royalty Company for its holdings. No details have been given out, but it is understood that the deal is at a closing point.

Normandie Oil Corporation's Myrtle B. Ramsey 1 at Iowa Colony, Brazoria County HT&B Section 69, drilled to 6911 feet in salt water sand topped at 6891 feet. Iowa Colony has been rated by several geologists as one of the best prospects found in the Gulf Coast in several years. The failure of this test does not condemn the prospect as the general opinion now is that it was on the west edge of the prospect.

Jack Frazier and Bunte have announced two new locations on the Highlands prospect, Harris County. The operators are already drilling on one wildcat in the area. R. Hornberger 1 is 330 feet from the north line and 2747 feet from the west line of the B. N. Sessuins Survey, Abstract 733. Carter Investment Company 1 is 3100 feet from the south line and 5800 feet from the west line of the Talcott Patching Survey, Abstract 619.

Another failure was reported on the Ogburn prospect, Harris County. Continental Oil Company and McAlester Fuel Company abandoned Sweeney Estate 1, one mile northwest of Killam's Sweeney 1, dry hole, at 7755 feet after logging a sand with a gas and distillate show, with salt water on bottom, from 6507 to 6522 feet.

About 3500 feet southwest of production at Eureka, Harris County, Tide Water Associated Oil Company made a test on Ford 1, J. Reinerman Survey, drilled to 8113 feet in salt water sands, topped at 8075 feet. Five and a half-inch casing was set at 8100 feet and was perforated from 7754 to 7758 feet with 16 shots and from 7762 to 7767 feet with 20 shots. Perforations were squeezed with cement for another test.

Sinclair Oil Company was waiting on orders on Goodykoontz 1, north of Stanolind Oil & Gas Company's Look 1, Fairbanks field, Harris County, last week after drilling to 6979 feet in salt water sand topped at 6970 feet. Several broken shows of oil were cored around 6850 feet.

Southwest of Conroe, Montgomery County, Jack Frazier and Bunte abandoned Chase National Bank 1, D. Garrett Survey, at 8515 feet last week. No Wilcox formation was reported. Salt water sands were cored in Cockfield at 5397 to 5406 feet.

In Austin County, L. Hranicky et al have spudded C. Hranicky 1, northwest of Wallis, J. Stevens Survey, 5350 feet from the northwest line and 700 feet from the northeast line of Survey.

West of production at Spindletop, the first oil field to be discovered in the Gulf Coast, Jefferson County, British American Oil Company's Gladys City Oil Company 1, J. A. Veatch Survey, was drilling in shale at 6200 feet last week with no information being given out. It is reported that a gas sand was cored at 4700 feet. The well is searching for a new flank sand.

Crown Central Petroleum Corporation et al have spudded a wildcat 1½ miles northwest of Louise field, Wharton County. R. Babcock et al is 466 feet out of the southeast corner of the west 40 acres of the east 85 acres of the R. Babcock 345-acre tract in the S. P. Middleton Survey, Abstract 269. The hole is contracted to Porter Drilling Company to 5500 feet. Other lease holders in the area are Sun Oil Company, Shell Petroleum Corporation, Skelly Oil Company and Felmont Oil Corporation.

TEXAS GULF COAST
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Anahuac—		
Humble, Middleton 35	577	7080
Dickinson—		
Martex Oil Co., Stewart 8	572	9054
Mid States, Kemmerling 1	144	9046
Fairbanks—		
Amerada-Stanolind, Dawson 2	429	6848
Smith 3	706	6852
Housh & Thompson, Bennett 1	625	6852
Friendswood—		
Humble, Ross 4	573	6044
Wood 2	602	6068
Hardin—		
Atlantic, Johnson-Finley B-1	452	7654
N. C. Ginther et al, West 1	416	7602
Hastings—		
Humble, Shindler 11	565	6081
Stanolind, Grote 12	387	5255
Katy—		
Stanolind, Seymour 1	¶28	7400
Sweeney 1	¶66	7500
Orange—		
Gulf, Orange National Bank 2	371	5986
Thompsons—		
Gulf, Booth A-X-29	80	3174
Tomball—		
Humble, Milo 7	312	5550
West Columbia—		
Frost & Dunman, Masterson 2	556	5332
Texas Co., Abrams 28	525	5700
Withers—		
Smith & McDannald, Dice-Bain 1	484	5545
Texas Co., Thompsons 10-A	99	5545
Brazoria County—		
Normandie Oil Corp., Ramsey 1, Iowa Colony area, HT&B sur.	*	6911
Galveston County—		
Midwest Royalty Co., Lobit 1, League City prospect, Perry & Austin sur	301	9198
Harris County—		
Continental-McAlester Fuel Co., Sweeney Estate 1, Ogburn area	*	7755
Montgomery County—		
Frazier & Bunte, Chase National Bank 1, sw of Conroe, D. Garrett sur	*	8515

*Failures; †Junked; ¶Million cu. ft. gas.

South Louisiana

North Crowley work-over producing oil from new depth.
Another gas-distillate producer completed at Lirette.

Lake Charles.—A new oil sand was discovered at North Crowley, Acadia Parish, last week by Humble Oil & Refining Company's Anton Ohlenforst 1, a workover completed at 8104 feet some time ago. Killed at its original depth, it cored to 8661 feet and 605 feet of liner was set. Perforated from 8608 to 8613 feet with 10 shots, it came in flowing 777 barrels of 35-gravity oil daily through a ¼-inch choke; tubing pressure 1650 pounds.

Republic Production Company, discoverer of Bancroft, Beauregard Parish, has a second test down to the producing sand. Columbia Land & Timber Company 2 logged the sand higher than the discovery well, coring oil sand from 7260 to 7297 feet. Seven-inch casing was set on bottom. It also had gas sand from 7092 to 7105 feet.

In Avoyelles Parish, Evergreen prospect, Magnolia Petroleum Company's Bowden 1 was coring in shale at 8201 feet in Cane River formation. The wildcat cored a few broken shows of oil in the Sparta formation.

At Chalkley, Cameron Parish, Humble Oil & Refining Company made a test on Hanszen 2 from 8562 to 8568 feet and it came in making a little gas and then died. The company made location for D. Miller 1 at Chalkley but across the parish line in Calcasieu Parish, D. Miller 1 is 466 feet north and 466 feet west of SEc 32-11s-6w.

The Texas Company's second well on the flank of Jefferson Island field, Iberia Parish, probably will be completed the coming week from a shallower sand than the discovery well. State Lake Peigneur 1 has set 7⅝-inch casing at 7869 feet after drilling to 7898 feet in shale which was topped at 7880

feet. A good body of oil sand was logged up the hole. The discovery well was completed below 8100 feet.

In the Beggs area, St. Landry Parish, Herton Oil Company's Thistlewaite Lumber Company 1 was coring below 10,200 feet last week and was looking for the Sparta sand. This well attempted to blow out from around 7000 feet.

Shell Petroleum Corporation continues to core sand and shale with shows of oil in Burdin 1, at Lake Verret, St. Martin Parish. Last week it was coring sandy shale at 8701 feet after coring oil show from 8177 to 8244 feet; 8291 to 8293 feet was broken sand and shale with an oil and gas show.

On the Lake Mongoulois salt dome, St. Martin Parish, The Texas Company is taking side-wall cores in State 6 at 9858 feet, after electrical log was run.

Below Usual Depth

The Texas Company is having trouble with Wax Bayou Company 1 at Bateman Lake, St. Mary Parish. After drilling to 11,088 feet the drill pipe was stuck near 10,050 feet. It was shot at 9815 feet and pulled. The hole was cleaned and is now down to 10,096 feet in shale and sand, below the regular producing sand. The company's Horseshoe Bayou 2 at Horseshoe Bayou, St. Mary Parish, was drilling in shale and lime at 11,494 feet, also below the regular producing sand.

St. Mary Oil Company has spudded a wildcat north of Charenton, St. Mary Parish. Hebert 1, Section 31-13s-9e, was waiting on cement at 770 feet at the close of the week.

At West Gueydan, Vermilion Parish, Pure Oil Company abandoned Vermilion Irrigation Company 1 at 9865 feet after unsuccessful attempts to take side wall cores at 9560 feet, 9590 feet and 9639 feet.

Louisiana Crusader Oil Company is preparing to work over the deep Oligocene discovery on the northwest side of Choctaw. Schwing Lumber Company 2 will probably be carried down to the 8300-foot horizon in which No. 3 was completed. The company has made location for No. 5, 75 feet west of No. 1 and in Section 29-8s-11e.

In St. Bernard Parish, Shell Beach prospect, Vendone Petroleum Corporation made location for Kennelworth 1, Section 59-13s-14e.

A new producing horizon was discovered at Bay St. Elaine, Terrebonne Parish, last week by The Texas Company. State Bay St. Elaine 18 drilled to 6811 feet in shale; from 6633 to 6689 feet was broken formation where a show of oil was cored. While reaming at 6775 feet, it blew out, making mud, gas and oil, and drill stem was stuck. Washed to bottom, it was drilled out to 6835 feet. Fifty-two feet of screen was set inside the drill stem and the well came in flowing 386 barrels of 21.5 gravity oil daily through the bit holes with ⅛-inch choke at the surface. Tubing pressure was 2800 pounds.

Another at Lirette

Humble Oil & Refining Company has completed another gas and distillate well at Lirette, Terrebonne Parish. Verret 1 drilled to 11,773 feet and plugged back to 8408 feet where 7-inch casing was set. The cement was drilled to 8485 feet and was perforated with 20 holes from 8450 to 8460 feet. It came in making 43 barrels of 47.7 gravity distillate and 4,600,000 cubic feet of gas daily through ¼-inch choke. Tubing pressure was 3170 pounds and casing pressure was 450 pounds.

South of production at Gibson, Terrebonne Parish, Shell Petroleum Corporation is still testing Kuntz 1 which has indicated it would open a new sand and extend the field. Last week the well was flowing 70 barrels of fluid per hour, 13 percent oil and 87 percent salt water, from 8887 feet. It also was making 115,000 cubic feet of gas; tubing pressure was 400 pounds and casing pressure 1100 pounds.

The Texas Company is preparing to test State Lake Barre 42 at Lake Barre, Terrebonne Parish, again in a new producing horizon. The crew is running screen after perforating casing from 10,460 to 10,520 feet with 154 shots. The hole originally was drilled to 11,333 feet in salt, topped at 11,300 feet.

South of Houma, Terrebonne Parish, Shell Petroleum Corporation's Peters 1 was drilling in sand and shale at 11,039 feet at the close of the week. The wildcat cored from 10,948 to 10,958 feet, and recovered sand with oil show but a salty taste in the bottom. From 10,958 to 10,965 feet was sand and shale with a slight oil show.

On the LaPlace prospect in St. John the Baptiste Parish, Shell Petroleum Corporation's Godchaux 1 was waiting on cement after perforating casing at several horizons and then squeezing cement through the holes. Casing was perforated from 8407 to 8417 feet and from 8395 to 8400 feet. A drill-stem test from 8910 to 8923 feet showed 3¼ barrels of gas-cut mud, 8 barrels of salt water and ½ barrel of sand. Pressure was 105 to 500 pounds.

SOUTH LOUISIANA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Abbeville—		
Continental, Primeaux 1	*	8120
Bayou Des Allemands—		
Amerada, St. Charles Land 2	*	9295
Bay St. Elaine—		
Texas Co., State 18	385	6834
Charenton—		
Kniseley Oil Co., LeBlanc 2	125	1787
East Hackberry—		
Darrel Davis et al, Bickford 1	*	2837
Grand Bay—		
Gulf, Grand Prairie Levee District 2-A	155	6148
Jennings—		
G. I. Golden, J. Clement 1	100	3300
Port City Oil Co., Fee 22	280	2080
Lafitte—		
Texas Co., Rigolets 10	1179	10188
Lirette—		
Humble, Verret 1, dr to 11,600 ft, pb and comp	47	8460
North Crowley—		
Humble, Ohlenforst 1 (wo)	777	8613
Sulphur—		
Union Sulphur, Fee 864	485	4535
Valentine—		
Pan American, Ducras-Abriabet 2	136	3739
West Gueydan—		
Pure, Vermilion Irrigation Co. 1	*	9865
West Hackberry—		
Berry Oil Co., C. Lyons 1	*	3533

*Failures; †Junked; ‡Million cu. ft. gas.

North Louisiana Fields

Lisbon extension well expected to revive operations.

Shreveport gasser changing to distillate producer.

Shreveport.—A revival of activity in the Lisbon field, Claiborne and Lincoln Parishes, is expected to result from completion last week of E. T. Oakes' E. C. Kilgore 2, NW SE 28-21n-5w, 1½ miles northwest of production in the old basal Glen Rose lime field.

This well was flowing, ungauged Thursday, from 5317 feet, after logging 9 feet of saturated basal Glen Rose lime. Seven-inch casing was cemented at 5288 feet. Only one other test is drilling at Lisbon, the latter being Magnolia Petroleum Company's C. S. Rodgers 1, NE NW 13-20n-5w, on the southeast edge of the field, offsetting a producer.

Oakes' new well was completed after using 5000 gallons of acid, although it swabbed considerable oil before acid was used. It is west of the same operator's E. C. Kilgore 1, NE SE 28-21n-5w, that logged 13 feet of saturation to 5317 feet but was never completed as a commercial well due to leaking connections and bad cement job, although it made considerable oil. The southeast northwest limits of Lisbon have never been defined, but all other directions are open.

Two tests on the south flank of the Cotton Valley field where crude oil has been found in both the "D" and "E" sands of the lower Marine, were at critical depths last week. Oliphant Oil Company's Stewart B-1, NW NE 5-20n-10w, Webster Parish, was coring at 8650 feet Thursday for the "D" horizon. It is a south offset to Standard Oil Company of Louisiana and Oliphant's Stewart 1, SE SE 32-21n-10w, that was plugged back and completed as an oil producer from the "D" horizon. On the same side of the field, Hunt Oil Company's J. B. Sandefur 1, NE NE 4-20n-10w, was at 8623 feet in the "D" sand with some showing of oil and gas having been logged in that horizon.

The Shreveport field marked time during the last week with R. E. Allison's State of Louisiana 1, SE SE 28-21n-10w, Caddo Parish, completed the week before as a dry gasser from 38 feet of formation, last week began to make distillate and was given a 24-hour gauge of 103 barrels of distillate and 3,469,000 cubic feet of gas in 24 hours through 5/16-inch choke.

Hollywood Oil Corporation's C. & B. Realty 1, NE NE 22-17n-14w, 5 miles south of the Shreveport field's two oil wells and gas-distillate well, which failed to find production in basal Glen Rose lime, made four unsuccessful efforts to run formation tester in the Jeter horizon of the Glen Rose from 4921-45 feet, plug having been set at the latter depth. If further efforts to run formation tester are unsuccessful casing may be set and perforated.

The next test that will reach the basal Glen Rose lime horizon of the field is R. L. Bauman's Slattery 1, NW NW 35-18n-14w, 1½ miles southeast of the three wells in the field. Bauman's test is coring at 5525 feet. On anhydrite markers it checked favorably

with the producers. Rodessa Oil & Gas Company's Chandler 1, SW NE 34-18n-14w, was drilling below 3720 feet after logging anhydrite stringer from 3635-60 feet. C. D. Loe's Meyer 1, SE SE 33-218n-14w, is drilling below 4560 feet after a reported show of oil and gas at 4286-98 feet in the anhydrite zone.

Magnolia Petroleum Company's Pardee C-1, C NW NE 17-23n-11w, deep geophysical prospect north of the shallow Cartersville field, was coring below 8660 feet, after failing to recover any further saturation in the lower Marine other than 6 feet from 8503-10 feet. The next 8-foot core was not recovered and the next logged shale.

Samuel S. Alexander may standardize Stell A-1, NE NE 5-12n-16w, DeSoto Parish wildcat, that has shown for a possible oil producer in the Washita, at 2761 feet. After using 2500 gallons of acid the test showed estimated two million feet of gas and a showing of oil through open tubing with tubing pressure 255 pounds and casing, 395 pounds. Later the well was shut in after swabbing and when re-opened flowing 1½ hours. Tubing was removed to install packer and 1100 feet of oil was standing in the hole.

Continental Oil Company is rigging for its second test on a large wildcat block in Madison Parish where first test found a salt dome at 4196 feet. New location is Singer Manufacturing Company 2, C 2-15n-11e. In Franklin and Tensas parishes in the same general area, Gulf Refining Company has assembled a block of acreage in township 14 north, range 10 east. Stanolind Oil & Gas Company has assembled a block in townships 22 and 23 north, range 13 west, Bossier Parish.

Shreveport.—Fourteen drilling permits were authorized last week by the Louisiana Conservation Commission of which 4 were for North Louisiana, in the following parishes: Bossier, 1; Madison, 1; and Union, 2. The 10 in South Louisiana were divided among the following parishes; Cameron, 1; LaFourche, 3; Plaquemines, 2; St. Mary, 3; and Vermillion, 1.

Six drilling permits were issued last week by the Arkansas Board of Conservation of which five were for Union County and one for Pike County. The Pike County permit was issued to Bruce E. Wallace for Tilvou 1, located 370 north and 330 west SEc SE SE 26-8n-24w. Those in Union County follow: Ohio Oil Company, Riley Furlong 5, located 330 north and 990 east C 12-17-14; Marine Oil Company, Calloway 3, located 660 north and west SEc south half Lot 4 NW 18-18-17; Lion Oil Refining Company, Bank 1, located 330 feet south and 660 feet east NWc SW SE 12-18-18; Nelson 4, located 330 north and 660 east SWc Lot 5 SW 18-18-17; Cecil 1, located 330 north and 660 west SEc Lot 6 NW 7-18-17.

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bossier (Bellevue)—		
Premier Inv. Co., Vance 3, 16-19-11	35	375
Red River (Wildcat)—		
J. M. Forgotson, Marston 1, 30-14-10	*	1713
Sabine (Converse)—		
W. L. McClanahan, Frost 1, 22-9n-13w	40	1616

*Failures; †Junked; ¶Million cu. ft. gas.

Arkansas Fields

One of six Schuler completions is extension

El Dorado, Ark.—Six Jones sand (lower Marine) wells were completed last week in Schuler, Union County, to bring the total from that horizon to 95. One of the wells extended production ⅜-mile northwest. This was Phillips Petroleum Company's Bank of El Dorado 1, C S½ NW SE 12-18-18, completed flowing 40 barrels per hour after casing was perforated in the Jones sand. Total depth 7732 feet.

Texas Canadian Oil Company has reached the shallow 1200-foot horizon with its second test Stocks 2, Section 9-15-22 in Nevada County, where its first well was recently completed at that shallow horizon making a heavy asphaltic oil.

J. K. Wadley is preparing to drill 6500-foot test in Section 33-18-26, La-Fayette County, where he recently assembled a block. B. A. Stevenson is assembling a block in township 11, range 32, Little River County, which has been the scene of renewed interest and starting of several tests recently.

Standard Oil Company of Louisiana is adding to its block in township 16, range 22, Columbia County at Buckner and has two seismic units working in township 17, range 22, south of Buckner where it has been leasing recently. In Bradley County, Amerada Petroleum Corporation still keeps a shooting unit. However, its seismic unit working in townships 16 and 17, range 11, has been moved into La-Fayette County. Mid-Continent Petroleum Corporation's shooting unit working in township 19, ranges 22 and 23 has completed its work there, and in Ouachita County, Atlantic Refining Company's seismic unit has finished work in townships 14 and 15, ranges 18 and 19.

The Magnolia (Kerr-Lynn) field, Columbia County, Arkansas, which has been beset by failures, only one oil well having been completed since the discovery well, had indications last week of another producer but brackish water appeared with the oil in a formation test.

The possible third producer for the field is Grady H. Vaughn's Levi Garrett 1, C SE SE 14-17-20, which with elevation of 302 feet logged top of lower Marine at 5315 feet, and showed 36 stands of oil and 6 stands of brackish water in a 12-minute drill-stem test from 7443-83 feet in the Permian. Operators were arranging to core ahead.

ARKANSAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Union (Rainbow City)—		
J. R. Lockhart, W. N. Raulston 3, 12-17-14	700	2950
Union (Schuler)—		
Lion O. R. Co., Henry 1, 12-18-18	1200	7610
Mayfield 6, 18-18-17	1200	7700
Powledge 1, 7-18-17	1100	7653
Marine Oil Co., Calloway 2, 13-18-18	960	7595
Phillips, Bank of El Dorado 1, 12-18-18	960	7732
Goodwin 2, 19-18-17	785	7700

*Failures; †Junked; ¶Million cu. ft. gas.

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SHREVEPORT LOUISIANA

Lake Charles—Houma—Converse
New Iberia—Monroe
Cotton Valley—Greggton
Magnolia—Houston

New Mexico Fields

New production northwest of Hobbs field is indicated.

New work in Lea County continues above summer level.

Hobbs, N. M.—Development of a new producing area in Lea County on a northwest trend from the Hobbs field appeared promising when the Westmount Oil Company's State-Amerada 1, CNW NE 12-17s-36e, 7 miles southeast of Lovington, encountered an estimated flow of 10,000,000 feet of dry gas in the Yates zone at 3230 feet. The gas was lubricated off, and in deepening to 3320 feet the drill pipe became stuck in anhydrite. An interesting structural condition centering around this project became known after completion of 4 dry holes to the north, northeast, south and southwest. The new test logged top of anhydrite at 1890 feet, salt series at 1995-2867 feet, and top of Yates at 3060 feet, with an elevation of 3830 feet. Western Drilling & Engineering Company's State 1, SE SE NE 13-17s-36e, located 1¼ miles south by east and the nearest failure, was abandoned January, 1933, in sulphur water at 4985-5215 feet, with an elevation of 3817 feet. The latter encountered gas at 3440 feet, and passed up lime pay at 4965-70 feet that tested one bailer of oil per hour. This oil horizon is the objective of the new wildcat, which is registering adequate structural relief on the upper geological markers to make a producer.

Ohio Oil Company's Mary Wills 1, C NE NW 35-26s-37e, semi-wildcat near the south line of Lea County, was rated at 2,000,000 feet of gas and spray of oil after 300-quart nitro shot at 3100-3280 feet. Liner will be run through shot hole because of cavings. It is located 1¾ miles north of pumping production from the same pay in the Scarborough field, Winkler County, Texas, and is about the same distance south by east of a gasser that converted itself into an oil producer in the Rhodes pool, which is the second oldest producing area in Lea County. Wills 1 logged base of salt at 2750 feet, and top of brown lime at 2780 feet, with an elevation of 2994 feet. The hole was cored to 3300 feet, or 306 feet sub sea.

NEW MEXICO
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Eddy County—		
Fullerton Oil Co., Little 1-A, c ne ne 28-18s-31e	75	3615
Yates & Dooley, Creek 1, c sw ne 35-18s-30e	*	3407
Lea County (Eunice)—		
Continental et al, Reed 7-B-23, ne nw se 23-20s-36e	1200	3848
Lea County (Hardy)—		
Twin Oil Corp., Joyce-Pruitt 1, c se se 31-21s-37e	30	3771
Lea County (Langlie)—		
Sam Weiner et al, Smith 2, ne se ne 4-25s-37e	610	3496
Lea County (Vacuum)—		
Cities Service, State 1-K, c sw ne 27-17s-35e	960	4625
Humble, State 1-J, c sw sw 19-17s-35e	250	4725
Magnolia, State-Bridges 16, c nw ne 25-17s-34e	250	4750
Phillips, State-Santa Fe 3, c sw nw 5-18s-35e	475	4650
State-Santa Fe 11, c ne sw 26-17s-35e	810	4611
Standard (Texas), State 1, lse 3, c sw nw 32-17s-35e	55	4705

*Failures; †Junked; ¶Million cu. ft. gas.

14 Locations

Authorization of 14 new locations for Lea County the past week boosted the total to 54 for the past 4 weeks. This activity represents a sharp gain above the average maintained throughout the summer, and the majority of the tests are offset obligations. Vacuum field has been the largest contributor, and will likely remain active during the remainder of the year although pipe line proration has cut the allowable to 38½ barrels daily per well since October 1. The Texas-New Mexico Pipe Line Company, only outlet for the Vacuum area, has insufficient capacity on its trunk line between the Eunice and Jal areas. A new pipe line loop will be required to relieve this congestion, else the company must be relieved of its well connections in the Monument and Eunice fields before Vacuum field can produce the 55 barrels daily per well, currently authorized.

Vacuum field added 3 new operations the past week, and a larger quota is in store for the new weekly report. Magnolia Petroleum Company's State 1-M, C NE NW 34-17s-35e, situated in the east extension, flowed 325 barrels oil natural in 8 hours from broken pay at 4410-4620 feet. Oil pay passed up at 3067-75 feet would have made a small pumper. The company's State-Bridges 17, C NE NE 25-17s-34e, failed to flow natural from lime at 4444-4750 feet. Three-stage acid treatment with 10,000 gallons resulted in a flow of 185 barrels of oil in 24 hours. Derrick is up for State-Bridges 19, C NW NW 24-17s-34e. Continental Oil Company awarded contract for State 3-H, C NW NE 35-17s-34e. Standard Oil Company of Texas made location for State 3, lease 3, C SW SE 24-17s-34e, and has additional work scheduled.

Completion of a small oil producer appeared more promising for Helmerich & Payne, Inc.,-Continental Oil Company's State 1-G-36, C NW SW 36-17s-35e, after plugging back to 4922 feet and perforating pipe with 81 shots at 4800-70 feet. The well swabbed 38 barrels of high gravity oil in 14 hours after this operation, having previously swabbed 30 barrels in 24 hours without drawing from soft lime section at 4840-60 feet, which was cased off in landing pipe at 4879 feet. This outpost was 2 miles southeast of Vacuum production when the pay encountered early last September, but extensions to the latter have since shortened the interval to 1¼ miles. The partnership operation was carried to 4950 feet, or 1047 feet sub sea, and is more than 100 feet below the water level established in the field.

Continental Oil Company et al's Reed 7-B-23, NE NW SE 23-20s-36e, west flank location near the intersection of the Eunice and Monument areas, averaged 48 barrels hourly through ¾-inch choke after using 1000 gallons of acid in saturated zone at 3770-3815 feet and 3830-48 feet. Ohio Oil Company has entered the prolific 6-well area situated near the junction of the Eunice and Penrose fields with location for C. J. Sanders 2, C NW NW 1-22s-36e. Sanders 1, an east offset, was spudded last December, but suspended operations after landing surface pipe due to the issuance of a permit extension.

The Penrose field gained three new operations, including J. C. Clower et al's Christmas-Manda 1, NE NE NW 28-22s-37e, located in a farm-out by Gulf Oil Corporation. Work is underway on Devonian Oil Company's Christmas 2, SE SW SE 28-22s-37e, and Humble Oil & Refining Company's State 4-H, C NE NW 34-22s-37e. The Langlie sandy-lime area contributed an equal number of new projects. Italo Petroleum Corporation of America's Carlson 2-B-27, NE NE SE 27-25s-37e, offsets a producer and is a short distance east of a failure. Anderson-Prichard Oil Corporation's Langlie 5, C NW NW 9-25s-37e, was slated to land casing on oil pay late last week. Sam Weiner et al's Smith 3, NE NE SE 4-25s-37e, has rigged up.

The Texas Company's Lodewick 1, western Lea County wildcat and 4¼ miles southeast by east of a wildcat pumper, logged base of salt at 2840 feet, and top of Yates at 2910 feet, with an elevation of 3759 feet. No shows were reported in drilling lime at 3950 feet with cable tools.

F. C. Wilson et al have made location for State 2, C NW NE 7-21s-35e, being a north offset to a semi-wildcat being completed by the partnership after nitro shot in lime at 3813 feet, or 134 feet sub sea.

In the Hardy sandy-lime area, Continental Oil Company et al placed contract for S. Meyer 2-B-31, C NE SW 31-20s-38e. Twin Oil Corporation made location for State 2, C SW SW 32-21s-37e. Parker Drilling Company's Erwin 3, C W½ NE SW 35-24s-37e, is a new operation on sub-leased acreage from The Texas Company.

Shell Petroleum Corporation's Harwood 1, C S½ SE SE 27-7s-35e, projected deep wildcat for south central Roosevelt County, was drilling at 3410 feet. Base of salt series was called at 2320 feet, and top of Yates at 2380 feet, with an elevation of 4200 feet.

Production-refining school opens at Oil City

Classes in oil production and refining were started last week at Oil City, Pennsylvania, under the auspices of the extension division of the school of mineral industries, Pennsylvania State College.

C. B. McClintock, Jr., production engineer and geologist, is conducting a second year course in production, while two advanced refining courses are being conducted by Russel Buckham, of James B. Berry Sons' Company, and Dr. G. O. Ebery, of Pennzoil Company.

Illinois Developments

Salt water dampens prospect of Lake Centralia north.

Encouraging reports from several scattered wildcats.

Olney, Ill.—Redwing & Frost's M. Pruden 1, Section 10-2n-2e, Salem Township, flowed salt water when drilled into the Benoist sand, thereby dampening hopes of extending the Lake Centralia field of Marion County 2½ miles north with production from that formation. The outpost had previously cored 7 feet of Benoist saturation from 1971 to 1978 feet. It is to be carried to the McClosky.

Northwest of the Pruden test 1½ miles, W. S. Tatum's Bachman 1, Section 5-2n-2e, found some saturation in the McClosky after drilling through a dry Benoist and was setting casing at 2170 feet. Completion of this test as a producing well will throw open a 4-mile strip to development between it and the proven area of the Lake Centralia field and should materially improve the outlook for production in the lower formation at the Pruden outpost. In parts of the Lake Centralia pool proper, production is obtained from both the Benoist and McClosky formations.

An indicated extension of the field ¾-mile east in the McClosky sand was given when Ed Robinson's Chitwood 1, Section 21-2n-2e, cored 17 feet of saturation below 2120 feet. Operators estimated initial production, after casing is set and the well drilled in, at 1000 barrels daily. Five hundred feet west of this test, George Anderson's Chitwood 1 is pumping about 100 barrels a day with a spudder from the Benoist sand, topped at 1872 feet. One half mile east of Robinson's test, Magnolia Petroleum Company recently drilled W. B. Young 1 and it was dry.

Encouraging reports were received from several scattered wildcat tests, but none were sufficiently far along to determnie their true value.

Hoffman et al's W. L. Trimble 1, Section 2-1n-12w, Wabash Township, Wabash County, cored saturation in the McClosky. It was to be given acid treatment after drilling plugs late last week.

A practically unbroken record of dry holes in Bond County may fall if DeMayo et al's S. J. Dresser 1, Section 24-6n-4w, Shoal Creek Township, near Greenville, developed 30 feet of saturation between 1770 and 1800 feet into commercial production. The showing is in a sand of the Niagarian region.

Butterfield & Morrisa's test in Section 23-9n, south of Carlinville, Macoupin County, struck about one half million cubic feet of gas at 515 feet. It is being carried to the McClosky in search of oil.

Clouding the wildcat picture was announcement that Ralph Neely et al's B. Sullivan 1, Section 18-13n-6e, East Nelson Township, southeast of Sullivan, was being abandoned at 2007 feet after finding the Benoist and McClosky dry. It was the first test undertaken in this county in the current boom.

In Cumberland County, Stewart Oil Company's R. Coble 1, Section 26-9n-9e, Woodbury Township, 2½ miles north of Hidalgo, was plugged at 2800 feet. The McClosky was dry.

C. R. Obermeyer announced he would move in a rig for completion of B. T. Adkins 1, Section 3-6n-9e, Wade Township, Jasper County, 1 mile west of Newton, which he temporarily abandaned at 2708 feet last summer.

Outstanding among announcements of new wildcats were:

In Washington County, the A. J. Colgan Company will spud this week on the H. Hoelscher farm, Section 25, Johannisburg Township, which is part of a 7000-acre block held by the company. Another test will be made in the southeast part of the same block.

In Hamilton County, H. H. Weinert, Inc., are starting Hamilton County Land Company 1, Section 32-3s-7e, Beaver Creek Township.

In Jefferson County, Magnolia Petroleum Company will drill a deep test on the T. J. Harvey farm, Section 22-2s-1e, Casner Township, 2½ miles west of Woodlawn.

Probably the hottest wildcat in Marion County last week was Conrey & Griffin's J. Bilek, Section 26-4n-2e, Foster Township, 8 miles east of Patoka, which was drilling at 1341 feet. Extensive acreage near the test is held by Shell Petroleum Corporation and The Texas Company, and royalty in the vicinity was selling at high prices. Leases were reported going for $200 an acre.

Confirmation of Pure Oil Company's new Cypress sand pool in Noble and Denver Townships, Richland County, was indicated when the company's H. Cazel, north offset to the discovery, cored over 20 feet of pay below 2590 feet. Located in Section 23-4n-9e, just across the Denver Township line from the F. Wakefield 1, casing was being set.

Activity in the North Olney area, Richland County, which has been slackening in recent weeks, has quickened with much of the current interest in the north end of the city and just north of the city limits. Pyramid Oil Company's University of Chicago (Bird Haven) 3, drilled several months ago, was finally abandoned last week after the third acid treatment brought salt water. Bottom was at 3100 feet.

Following is the summary of other activity in this field: Wicklund Development Company's L. Mack 1, Section 34-4n-10e, pits dug; J. Schnepper 1, Section 21-4n-10e, location; R. Sager 2, Section 23-4n-10e, derrick up; Trustees of First National Bank of Olney 1, Section 34-4n-10e, drilling at 2900 feet; Pyramid Oil Company's Ed J. Houser 2, Section 15-4n-10e, location; The Texas Company's McCawley Baird 1, Section 22-4n-10e, setting surface pipe; C. Scherer 1, Section 22-4n-10e, location; Ed Winter 2, Section 27-4n-10e, awaiting rig; Ed Winter 1, Section 27-4n-10e, drilling at 2900 feet; Mrs. Wm. Elliott 1, Section 22-4n-10e, drilling at 2000 feet; Lough et al's Mrs. Fred Schilt 1, Section 25-4n-10e, surface pipe set with cable tools and awaiting rotary rig to complete; Chas. Skinner et al's Sylvan Iris School 1, Section 23-4n-10e, setting surface

BALDWIN OIL FIELD CHAINS

FACTORY REPRESENTATIVE

GEO. J. FIX - DALLAS, TEXAS

Sold in all Oil Fields

pipe with cable tools; Kingwood Oil Company's W. M. McCane 1, Section 35-4n-10e, erecting derrick, and Brookins & Newman's Boatman et al 1, Section 34-4n-10e, location.

Additional drilling at B. B. B. Oil & Gas Company's L. Haughton 2, Section 12-4n-11w, Russell Township, Lawrence County, to 1095 feet increased the flow of gas to 12,080,000 cubic feet per day. Production is from the Buchanan sand, topped at 1088 feet, and the well is the largest gasser in the state. Three other tests are drilling in this area.

ILLINOIS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Clay County—		
Pure, G. L. Travis 1C	988	3057
C. D. Duff 2B	958	3035
C. D. Duff 3A	455	3025
C. D. Duff 3B	869	3010
C. D. Duff 4B	372	3018
Clinton County—		
Santa Fe O&G Co., Vandeloo 5	45	960
Blosser et al, E. Carson 1	*	1410
Shell, E. C. Criley 5	114	1359
W. C. McBride, Inc., Carson 4	125	1223
E. Carson 5	190	1368
Carson 6	175	1365
Adams O&G Co., E. Copple 3	103	1371
Copple 4	100	1366
Gulf, Felton 1	187	1374
M. & K. Oil Co., Keaner 1	*	1276
Fayette County—		
Carter Oil Co., I. Hobbs 2	1113	1523
Lem Lilly 1	84	1613
J. G. Main 4	191	1595
J. G. Main 5	156	1592
J. G. Main 3	178	1564
J. G. Main 6	296	1565
J. G. Main 7	403	1551
L. Wood 3	93	1491
L. Wood 5	540	1477
J. Hogan 1	94	1589
R. T. Hopper 1	97	1588
J. Dial 1	133	1597
Cummings et al, J. Lay 1	150	1484
Burtschi 2	175	1605
Kingwood-Duncan, Yolton 6	224	1533
W. C. McBride, Inc., L. Logue 1	147	1442
H. Stokes 3A	100	1550
H. Stokes 4A	386	1519
H. Stokes 5A	400	1527
C. F. Steele, Arnold 2	80	1528
Iotex Corp., Owens 2	192	1508
Owens 3	175	1481
Shell, Harper 1	124	1536
Thayer et al, Morrison 3	150	1513
Morrison 4	250	1602
Mabee Drlg. Co., First National Bank 1	72	1564
Phillips, Perryman 1	*	1822
Oil, Inc., E. Wood 1	120	1619
Whisenant et al, Lilly 1A	100	1557
E. F. Jones, Rogers 1	*	1637
Magnolia, Buzzard 1	400	1473
Buzzard 2	33	1460
Buzzard 3	450	1465
Merrick et al, Batterbusch 1	63	1571
J. & B. Hunt, Long 2	60	1604
Allied Oil Corp., Carter 1	40	1536
Franklin County—		
Adams O&G Co., Old Ben 1	*	3102
Buell, Forrest 1	*	3103
Jackson County—		
T. T. Eason, Bonlin 1	*	1891
Jefferson County—		
Carter, Sanders 1	209	1943
Lawrence County—		
Herbst & Fox, Haughton 1	¶4.06	1100
Joe Kesl et al, Warner 1	*	1750
McDonough County—		
Spence et al, Hoing 9	2	433
Marion County—		
Iroquois O&G Co., Phillips 1	*	1728
Ann Bell Oil Co., Schlogater 1	*	1823
I. B. Davis et al, Tubbs 1	*	1475
Ray & Thorne, Scott 1	*	1096
Thompson Drlg. Co., W. D. Wright 1	*	2045
Bert Fields, M. & I. R.R. 4	236	1375
M. & I. R.R. 5	65	1231
C. F. Frazier, Grosch 1	90	1385
Hawley Oil Co., Stratman 1	103	1380
Illinois-Iowa Power Co., Fee 2	200	1369
Lange, Dr. Plarrar 1	110	1379
Lincoln, McClelland 1	35	1395
Menhall, I. C. R.R. 4	200	1371
I. C. R.R. 5	150	1366
Lewis C. Simmel, Lambrecht 1	50	1385
Max Prill 1	75	1382
W. F. Lacy, Johnson 1	75	1378
Ostron, Petrea 1	135	1384
Texas Co., C. Reed 2	999	1713
Canull 3	89	1732

*Failures; †Junked; ¶Million cu. ft. gas.

Eastern Fields

Birk City area extension two miles north indicated

Pittsburgh—Prospects of extending the Birk City oil field of Henderson and Daviess counties, Kentucky, 2 miles to the north were bright last week after A. C. R. Drilling Company's (Cooper, Acos & Cooper) R. L. Logsdon 1, ¾ mile southeast of Stanley, Daviess County, cored 15 feet of McClosky saturation. Casing was being cemented to saturation. If successfully completed, the outpost will throw open a large area between Stanley and Birk City to development. The test had passed through 18 feet of excellent Jones sand saturation.

Lincoln Oil Company abandoned A. Pirtle 1, wildcat 3½ miles northwest of the proven Birk City field at 2000 feet, but an independent syndicate was being formed to deepen the test another 200 feet in an effort to get a producer in the McClosky limestone.

Two completions were recorded in the Birk City field last week: Carter Oil Company's Mauzey 2 pumped 516 barrels in 24 hours, and the same company's O. Benham 2 pumped 154 barrels in 9 hours. Both are in Henderson County. The company is making location for its Benham 3, and has derrick up for Mauzey 3.

A one half working interest in the 241-acre H. A. Jones Heirs' lease in the Gilmore pool was assigned last week by W. E. Hupp et al to Phillips Petroleum Company. Federal tax stamps fixed to the instrument indicate that $20,000 was paid, one of the highest figures involved in an oil and gas deal in Western Kentucky during the current boom. Drilling rights on the Jones lease were acquired by Hupp for $6000 in oil and an unannounced sum of cash.

Parker Drilling Company has a contract to sink Bur-Kan Petroleum Company's H. P. Barret Green 1 to 2500 feet. The wildcat, drilling at 680 feet after spudding last week, is 4 miles south of Henderson, Henderson County, and 15 miles west of the East Henderson County oil field. Four miles from this test, Phillips Petroleum Company's I. Royster 1 was drilling at 2580 feet, with the McClosky expected at 2600 feet.

In another outlying Henderson County district, D. E. Ticherson's S. Banks 1, near the mouth of the Green River in the Baskett Section, 7 miles north of Henderson, was spudded last week. The test is being drilled by Koker Drilling Company, contractor, with cable tools. It is approximately 15 miles northwest of the Birk City pool and in a previously untested area.

Kentucky Natural Gas Corporation's O. Overfield 1, in the Rockhouse Section near Robards, Henderson County, was completed for a 40-barrel Niagara sand producer. The pay was 21 feet thick, and the well is the second to be drilled in that area. Kentucky Natural Gas Corporation has made locations for three more wells on the Farmer tract adjoining the Overfield lease.

In the Utica Section of Daviess County, four tests are being started in the vicinity of the Ed Bennett well which was recently cleaned out by A. D. Shaffer et al, resulting in a McClosky producer after being abandoned for 7 years. Jack Akers has moved equipment to the 50-acre Bennett farm to drill an offset for O. D. Vickers 900 feet southeast of the original well; W. E. Hupp and W. R. Hildebrand will drill on the 100-acre Baird lease, about 1500 feet southwest of the Bennett; Henry Vickers has made a location about 1200 feet west of the Bennett and is moving in equipment, and Shaffer et al are moving north for a second test on the Bennett tract.

In the New York-Pennsylvania deep sand gas area, Godfrey L. Cabot, Inc.'s Flora Bell Joy 1, Brookfield Township, Tioga County, on the Empire State side, was abandoned at 5050 feet after only a small show of gas was found in the Oriskany, between 5026 and 5049 feet.

Eastern States completed operations gained last week in West Virginia and Ohio, and dropped in Kentucky and outlying sections of Pennsylvania. The gain in West Virginia was from 14 to 22, the past week's completions including four oil wells averaging 7 barrels daily production, 17 gas wells and 1 dry hole. Ohio completions gained 3 to 12, which included 4 oil wells averaging 5 barrels each, 3 gas wells and 5 dry holes. The drop in Kentucky was from 25 to 16, including 5 oil wells averaging 143 barrels initial daily production, 2 gas wells and 9 dry holes. Pennsylvania completed operations declined 1 to 2, both of which were gas wells.

EASTERN FIELDS
Completions

OHIO

Company, Well and Location	Init. Prod. Bbls.	Depth
Athens County—		
Gross & McCune, Sapp 1	*	580
Guernsey County—		
Jones & Jewell, Davidson 1	¶.40	807
Ohio F. G. Co., Stillion 1	¶.15	1621
Hocking County—		
Preston Oil Co., Sunday Creek 1682	2	3498
Knox County—		
H. E. Perkins, Parker 1	¶3.00	2697
Horn 2	*	2680
Licking County—		
Ward et al, Hughes 1	2	786
Lorain County—		
Edson & Son, Stevens 1	*	2422
Putnam County—		
Brown et al, McCullough 4	10	1992
Seneca County—		
Wicklund Dev. Co., Hammer 1	*	2043
Washington County—		
Hall & Henning, McKee 5	5	1497
Reynolds, West 1	*	1430

WEST VIRGINIA

Braxton County—		
McCall Dr. Co., Clauser 7	¶.10	2310
Cabel County—		
Swann Gas Co., Swann 2	¶.17	3765
Calhoun County—		
F. F. McIntosh, Kimble 1	¶.96	2182
Clay County—		
Boggess O&G Co., Thomas 2	10	1960
Doddridge County—		
Hope Nat. Gas Co., Farr 7780	¶.35	1900
Gilmer County—		
Ganer et al, Stout 1	¶.25	1968
C. S. Morris, Roberts 1	¶.25	1971
Gilmer County Gas Co., Gerwig 2	¶.20	2103
Harrison County—		
Eagle Gas Co., Harbert 1	¶.25	3340
Kanawha County—		
Columbian Carbon Co., Hanna 1	¶1.40	4319
United Fuel Gas Co., J. W. Harding 4802	¶12.32	4918
Lewis County—		
Goodwin & Watson, Burkhammer 1	¶.23	2551
Lincoln County—		
Kanawha Gas & Util. Co., Cooper 1	¶.09	3812
Ritchie County—		
Jackson & Co., Jordan 1	15	2145
Astron Oil Co., Strasburg 15	1	667
Deem & Davis, Foster 1	¶.50	1920
Tyler County—		
Neely Oil Co., Martin 1	*	1777
Upshur County—		
Hope Nat. Gas Co., Phillips 7813	¶.20	7813
Wetzel County—		
J. T. McIntyre, Erlewine 1	¶.32	1009
Newton & Co., Fitzsimmons 1	¶.20	570
Wirt County—		
W. C. Patterson, Robinson 22	1	670
Realty Oil Co., Menfee 1	¶.35	1850

*Failures; †Junked; ¶Million cu. ft. gas.

Michigan Fields

Freeman-Redding producing limits extended three ways

Mt. Pleasant, Mich.—Between 1600 and 2000 acres now appear proven for drilling the 3900 foot Monroe limestone horizon in the new Freeman-Redding district, Clare County, opened in July this year. Biggest boon for the district since discovery was the current week when commercial production was developed on three new flanks.

McClanahan Oil Company's State 1 (farm out from Associated Petroleum Company), SE NW SW 33-19n-6w, Redding Township, 1 mile west and ¼-mile north of developed production in the discovery part of the pool, when drilled 5 feet deeper after cleaning up a 10-day fishing job started flowing by heads from 3897 feet. It flowed 51 barrels the first 4 hours on test and operators announced intentions to acidize with 500 gallons immediately.

Top of the Monroe lime was drilled at 3877 feet, practically flat with the discovery on structure, with pay 7 feet in the lime. Pure Oil Company and Socony Vacuum Oil Company have offsets. An east 40-acre offsetting tract owned by the state is unleased.

Two months ago Pure Oil Company stepped ahead of the discovery two miles north and developed Switzer 1, Section 27-19n-6w, Redding Township, for 600 barrels daily with acid from Monroe. This week the same company's Zink 1, SW SE 27, half mile east of Switzer 1, initialed 440 barrels in 14 hours open at 3891 feet, producing from 10 feet in the Monroe.

On the southeast flank of the field Mammoth Producing & Refining Corporation's Van Horn 1, NW NE SE, Section 2-18n-6w, Freeman Township, ½ mile southeast of previously drilled production, initialed 509 barrels after acid treatment (500 gallons) but after 36 hours started to cut a reported 30 percent water. It is bottomed at 3909½ feet, about 10 feet off structure, indicating a potential ½-mile extension but likewise the edge of the producing structure.

Thirty-one tests were active at midweek with 15 new locations following completion of outpost wells.

Parker Drilling Company is rigging up for Gulf Refining Company's Fell 4, Section 34-19n-6w, Redding, projected for the Monroe horizon with rotary. Considerable interest has been built around the proposal due to the fact that no Michigan well has been drilled below the Traverse beds with rotary tools. Deepest rotary hole was to the Traverse top, 2800 feet, in the Crystal play, Montcalm County, three years ago.

Drilling operations in an 80-acre area of the town of Bloomingdale, Van Buren County, had jumped to 49 this week, but results of the half dozen tests so far completed in the shallow 1,200 foot Traverse zone have been short of expectations of operators—about equal to the predictions of petroleum geologists when the townsite play started three weeks ago.

An area of around 80-acres in the town still looks as productive in some degree but initials have ranged from 200 barrels down with water already cutting production on two of the first wells drilled.

Two Texas water flood permits

The Texas Railroad Commission last week issued orders approving two water flooding projects for North Texas leases.

Bell Oil & Gas Company was given a permit to flood its Powell lease in the C. Winters Survey, Wichita County, and Peterson and McCarty were granted a permit to repressure their leases in the Peterson Field, Archer County.

MICHIGAN Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegan County—		
O. & G.'s Godfrey 1, ne nw ne 17-2n-13w	*	1502
Eureka Dev. Co.'s Bachman 1, ne se ne 30-4n-12w	lcn.	abd.
Bachman 2, sw se ne 30-4n-12w	lcn.	abn.
Black Rock, Harnish 1, se ne sw 30-4n-12w	95	1582
Gordon Oil Co., Fokkert 1, ne ne sw 26-4n-15w	*	1750
Sutherland, Runkle 1, sw sw ne 24-3n-13w	5	1751
R. L. Obrien, Jewell 1, nw se nw 15-1n-12w	*	1790
Muskegon Dev. Co., Dannenberg 2, nw ne ne 28-4n-14w	90	1489
Crown Dev. Co., George 2, nw nw sw 21-4n-13w	250	1590
Mesel & Spielberg, Jager 2, sw nw se 21-4n-13w	100	1505
Allender, Palmer 1, sw sw ne 21-4n-13w	90	1591
Allen, Brenner 1, ne se se 24-4n-13w	*	1000
Clare County—		
Mammoth, Van Horn 1, nw ne se 3-18n-6w	190	3909
Socony Vacuum, Van Horn 3, ne nw nw 3-18n-6w	480	3910
Van Horn 4, sw nw nw 3-18n-6w	1400	3902
Van Buren County—		
Fisher & McCall, Compton 1, se nw se 9-1s-14w	*	1248
Crosberg 1, sw nw nw 16-1s-14w	100	1207
Wiggins 6, nw nw ne 16-1s-14w	50	1238
Nelson, Canute 1, sw sw sw 10-1s-14w	*	1323
Vanco Oil Co., Alfred 1, nw sw nw 16-1s-14w	200	1216
Gordon Oil Co., Bunge 1, nw ne nw 16-1s-14w	500	1212
Michigan United, Hicks 1, se se nw 16-1s-14w	*	1302

*Failures; †Junked; ¶Million cu. ft. gas.

KENTUCKY

Company, Well and Location	Init. Prod. Bbls.	Depth
Butler County—		
H. Smith et al, Arnold 3	10	160
Evans et al, Embry 1	*	....
Heck 1	*	680
Breslin et al, Harper 2	*	367
Daviess County—		
Hamilton, Birk City School 1	200	1751
Carter Oil Co., Wimsatt 1	*	1928
Elliott County—		
C. M. Nicholas, Fannin 1	5	....
Floyd County—		
Kentucky-W. Va. Gas Co., Slone 575	*	2720
Hancock County—		
Eureka Dr. Co., Keown 1	¶.05	480
Henderson County—		
Carter Oil Co., Benham 1	250	....
Martin County—		
Warfield Gas Co., Cornett 4782	¶1.55	1168
Muhlenberg County—		
Evans et al, Craig 1	*	1007
Ohio County—		
Richards et al, Little Zion 1	*	582
B. & B. Oil Co., Patton 1	*	601
A. Teller, A. Dickens 6	*	627
Powell County—		
Faulkner, Adkins 1	25	....

PENNSYLVANIA

Washington County—		
Keystone Gas Co., Ross 4	¶.14	2723
D. G. Braddock, Braddock 6	¶.09	2665
Bradford District		
J. S. Brown, Ball	1	....
Victory Oil Co., Wright	2	....
Esther Oil, Inc., Lawton	2	....
J. P. Kervin, Fee	1	....
Forest Oil Corp., 3 wells	3	....
Niagara Oil Corp., 2 wells	2	....
Bradford Transit Co., 11 wells	11	....
Bradford: Water (Pressure) Wells		
Forest Oil Corp.	...	....
Niagara Oil Corp.	...	..
Butler-Armstrong District		
Porter Bros., Dewey Estate	*	....
McKight et al, Howard Reiber	3	....
Middle District		
Lawrence Elder, Luke S. Buckley	½	....
Phillips Oil & Gas Co., M. Campbell	¶	....
New York-Pennsylvania: Gas Fields		
Williamsport Oil & Gas Co., U. B. Russell	*	....
New Penn Development Corp., John Hill	*	....

*Failures; †Junked; ¶Million cu. ft. gas.

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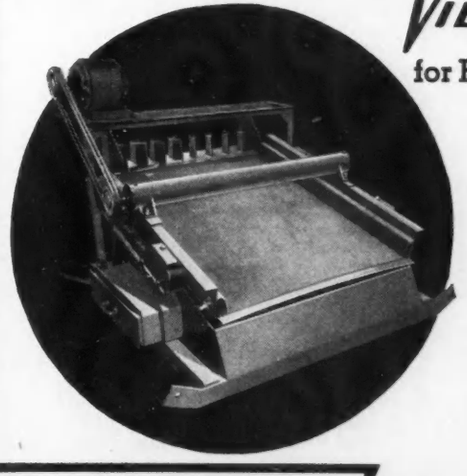
for Reconditioning Rotary Mud



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LINK-BELT Vibrating SCREEN

California Fields

Los Angeles County wildcat flows 1100 barrels initial.

Navy wants deep drilling at Buena Vista Hills deferred.

Los Angeles.—Tide Water Associated Oil Company last week completed Porter 1, NEc 27-3-6, Los Angeles County wildcat, flowing 1100 barrels of 23.7-gravity oil, to open a new field. Gas with the oil was estimated 500,000 cubic feet. A cut of 3 percent was expected to clear up. Hole was drilled to 5395 feet and plugged back to 5365 feet, with 6⅝-inch casing set at 4795 feet. Flow is from the Modelo zone.

Site of the well is 7 miles northwest of San Fernando, south of Pico anticline. Nearest production is at Rice Canyon, 3 miles north. It is in this vicinity that first oil was discovered in California by missionaries who were seeking water.

Standard Oil Company, Union Oil Company, General Petroleum Corporation and several others own acreage close in, and lease obligations of Tide Water Associated Oil Company will require drilling another test within 90 days.

Union Oil Company last week swabbed in KCL 5-34, Section 34-28-25, Rio Bravo field, for an initial yield of 2500 barrels of 36-gravity oil along with 2,100,000 cubic feet of gas per day from 11,500 feet. Casing pressure was 1900 pounds and 2000 pounds on the tubing. Two other tests are nearing the critical stage, KCL 2-34 is down to 11,250 feet and KCL 6-34 is drilling below 11,000 feet and is slated for completion in the same deep horizon.

Some interesting angles are being provided for operators in the Canal field, where Shell Oil Company is trying to develop production below the Stevens sand. The company's KCL 87-4 is drilling below 8560 feet and has yet to pick up the Stevens. Should the Stevens zone be barren like it is at Rio Bravo, the company may decide to carry this project into the Vedder. KCL 87-4 is in Section 4-30-25, two miles northeast of Canal field, the location falling nearer Rio Bravo and Greeley fields where the Vedder is productive. Shell Oil Company completed KCL A-43-25 at Canal for 3300 barrels of 36-gravity oil per day from 8340 feet. Derrick is up for KCL A-47-14, Section 14-30-35.

Tide Water Associated Oil Company last week brought in McGonigle 11 in the Ventura Avenue field for 1600 barrels of 23.8-gravity oil per day from 10,935 feet. This is the deepest producing well in the field. Shell Oil Company's Edison 30, during a production test produced all salt water from a plugged-back depth of 7520 feet and more work is scheduled to improve its possibilities.

Continental Oil Company continues to work on KCL A-3-8, in the Wasco field and is trying to locate source of bottom water after plugging back to 13,216 feet with total depth at 13,644 feet. Near Shafter, this company's KCL C-1, deep test in Section 26-27-24, with bottom at 13,064 feet, has been plugged back to 8970 feet and is being perforated opposite Pliocene showings between 6600 and 6800 feet. It produced salt water during a recent test. KCL E-1, Section 17-30-26, east of Wasco, was redrilled to 8190 feet where it is standing cemented.

Most of the Los Angeles Basin interest continues to take in the Torrance extension developed earlier in the summer by D & B Oil Company. Much new offsetting is under way. Arthur M. Macrate has completed Kupfer 1 for an undetermined amount from 5127 feet. Derrick is up for Macrate's No. 1-1, which will offset Macson Oil Company's No. 1589-1-1 to the west. D & B Oil Company's Dawn 2, a deep test, has been suspended. It prospected to 6390 feet without commercial results and may have a discouraging effect. Richfield Oil Corporation's Spring 1 an easterly outpost well is good for approximately 150 barrels daily at 5202 feet. Bandini Petroleum Company's Bandini-Harbor Development 1 is flowing 200 barrels daily from 5367 feet, and Severns Drilling Company's Howery 1 at 5300 feet is yielding 300 barrels daily.

Development of the Buena Vista Hills oil and gas field is opposed by the Navy Department, according to a telegram received last week from the Secretary of the Navy by Commander William G. Greenman, inspector of Naval petroleum reserves in California.

Development of vast reserves along the floor of the San Joaquin Valley that encouraged Buena Vista operators to propose further development. Something over 30,000 acres are proven in the Buena Vista Hills field. Operators, according to Navy reports, propose drilling a deep test (present production is at 3500 feet). The proposed test would be drilled on government land in the reserve under the authority of the plan agreement for the cooperative development of this area approved by the President on July 6, 1936.

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CALIFORNIA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Athens-Rosecrans—		
Superior, Maxwell 11	2054	7676
Dominguez—		
Selbar Oil Co., No. 3	250	4395
Montebello—		
Herley-Kelley, Burke 1	900	6433
McVicar & Rood, Manz 2	1050	6410
Standard, Braun 3	960	6470
Torrance Extension—		
Caminol Co., Torrance 2-12	300	5317
Ring Oil Co., Mahar 1	654	5265
Wilton Oil Co., No. 6	375	5298
Torrance—		
Elexico Oil Co., Airey 4	250	4975
Wilmington—		
General, Harbor Comm (LB) 20	675	4040
Richfield, Pacific Dock (LB) 13	410	3670
Union Pacific, UP (LB) 92	1344	3971
Belridge—		
Belridge Oil Co., No. 13	1775	8465
Fruitvale—		
Meridian Oil Co., Fee 3	85	3134
Kettleman North Dome—		
K. N. D. A., No. 43-20Q	228	8914
Mt. Poso—		
Union, Tribe 13	289	1900
Rio Bravo—		
Superior, Ruhl 2	1029	11,523
Ten Section—		
Shell, KCL A-83-25	2473	8220
Gato Ridge—		
Petrol Corp., Magenheimer 5-11	250	4714
Long Beach—		
A. S. Johnson Dr. Co., No. 35	*	1125
Coalinga—		
Medford Oil Co., F. C. Goetz 1	*	6763
Mt. Poso—		
Tarr & McComb, Stockton 1	*	1375
Berenda (Northern Calif.)—		
Barnhart-Morrow Cons., Arnold 1	*	3190

*Failures; †Junked; ¶Million cu. ft. gas.

Washington well has blowout at 1070 feet

Port Angeles, Wash.—Consolidated Oil Company's test in Section 12-26n-14w, north of the Hoh River, Jefferson County, blew in last week at 1070 feet, spraying the rig with oil and rotary mud.

The hole had been mudded in to await the arrival of casing when gas pressure, overcoming back pressure of the rotary mud, caused the blowout. The oil is described as light, of paraffine base. Two other wells on the lease, producing small quantities of oil, are in process of re-completion with modern engineering methods.

The new test was drilled by Petroleum Engineering Corporation, with Marcus E. Howard as drilling superintendent.

Rocky Mountain Fields

Osage field production is extended to the south and west. Lance Creek well makes good flow from Minnelusa sand.

Casper, Wyo.—Producing area of the Osage field (on the northeastern rim of the Powder River Basin, major light oil producing district of the Rocky Mountain district) was extended to the south and west this week by the Updike Brothers' No. 1, NE SW NE 35-46n-64w, ¾-mile southwest of the proved area of the field. The well is rated at around 40 barrels daily on pump from sand logged at 2027-39 feet. It drilled into the oil sand several weeks ago but lost drill pipe which delayed completion.

The well is located in the Fiddler Creek area of the field where a test drilled several years ago reported good oil shows but was abandoned because of inability to shut off water from an overlying formation. Indications are that the new pool developed by the Updike well may become one of the most important producing zones of the field, producing sands logging from 2 to 4 times as thick as is the case with identical formations in the field proper. A gradual dip basinward from the field places the producing sands of the inner zone at a deeper level but correspondingly greater production is indicated in initial tests.

Wheedon et al's No. 1, CSW NE 21-46n-64w, is rigging up rotary equipment and will be underway this week. George Keisling's Guyer 1, SE SE NW 26-46n-64w, is making hole at 500 feet and F. G. Dilger's Trustee 16, SW SW NE 30-46n-63w, is running casing to 1402 feet total depth, on top of the producing sand.

One of the best Leo sand completions in the Lance Creek field, Niobrara County, Eastern Wyoming, Ohio Oil Company's Elizabeth Lamb 11, Account 2, SW NE SE 5-35n-65w, on the southern side of the field, made 1722 barrels during the second 24 hours on test from the second Minnelusa horizon at 5461-5542 feet.

Continental Oil Company is drilling two wells on the southern flank of the Lance Creek producing area. Dielman 1-B, NW SE NE 7-35n-65w, is coring at 5410 feet feeling for saturation in the Leo sand formation topped at 5408 feet. Dielman 2-B, NE NE NE 8-35n-65w, offsetting the Minnelusa Oil Corporation's record Leo sand producer, is drilling at 1237 feet.

Deep test in the jointly operated Big Medicine Bow field, Carbon County, southern Wyoming, Ohio Oil Company and California Company's William Kyle 3-A, SW NE 26-21n-79w, which drilled to 7838 feet in granite to test lower formation possibilities for the district, recompleted as a producer in the base of the upper Sundance horizon at 5660 feet to which depth well had plugged back. No oil or gas shows were encountered below the Sundance producing beds in this field. William Kyle 5-A, CNW SE 26-21n-79w, south offset to the deep test hole in the Medicine Bow field, is drilling at 4674 feet. It had the top of the Wall Creek sands at 4498 feet and has the Sundance formations as its objective.

Operations are nearing critical depth in Ohio Oil Company's Baker-Oil Springs 3-A, SW NW SW 2-23n-79w, on the southern side of the Oil Springs gas field, Carbon County. Well is drilling ahead at 780 feet after setting 10-¾ inch surface pipe at 380 feet. The Sundance gas sand in this field is generally encountered at around 1000 feet.

Sinclair-Wyoming Oil Company's newest start in the Mahoney Dome field, Carbon County, Mahoney 4, CNL NE SW 34-26n-88w, is rigging up rotary equipment. Objective of the well will be the deep Tensleep producing formations of the field which were proven for commercial production recently in Mahoney 3-A, ¼-mile north.

Cunningham Oil Company started drilling this week on Union Pacific-Fee 1, NW SE NE 21-22n-78w, wildcat location on the Horne structure, Carbon County. Location was spotted several months ago but was suspended pending completion of company's Wolfe-Union Pacific test on the Flattop structure, abandoned a week ago as a dry hole.

Operators are coring in the Frontier producing sand at 8731 feet in the Resolute Oil Company's State 2, CSW SW 16-57n-101w, in the Badger Basin field, in Park County, northwestern Wyoming. This is the only active drilling in this field, the deepest commercial area in the Rocky Mountain states.

An old well in the Elk Basin field, Park County, Stanolind Oil & Gas Company's Elk 26-2, E NE 24-58n-100w, is deepening at 2474 feet to test production in the base of the Dakota formation. The well formerly produced from the upper sections of the sand at 2440 feet.

MOUNTAIN STATES Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA		
Blaine County (Wayne Creek Structure)—		
Montana Gas Corp., Duncan 1, cnw se 6-32n-24e	*	1710
Glacier County (Cut Bank Field)—		
Texas Co., Bonnett 1, se se 8-32n-5w	22	2966
WYOMING		
Carbon County (Mahoney Dome Field)—		
Sinclair-Wyoming, Mahoney 3, cse nw 34-26n-88w	172	4486
Niobrara County (Lance Creek Field)—		
Continental Oil Co., Tom Bell 13, cse ne se 33-36n-65w	195	3974
Sweetwater County (Lost Soldier Field)—		
Sinclair-Wyoming, Lost Soldier 79, se ne ne 10-26n-90w	100	1967

*Failures; †Junked; ¶Million cu. ft. gas.

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IMPORTANT WILDCAT TESTS

ALABAMA

Barbour—H. A. Stebbinger's Mrs. Alyce Robertson 1, ne ne 19-10-26, rur. **Choctaw**—Joe Modisett et al's McCorvey 1, se sw sw 20-9n-2w, owdd, td 7520 ft. **Greene**—R. T. Jeffrey's R. C. Lett 1, 3-20n-2e, sd 720 ft. **Lawrence**—Mid-Southern Pet. Co.'s Rob Jacobs 1, sw se 11-7-7, rust. **Mobile**—J. C. Prine's King 2, ne ne 4-1n-4w, sd 720 ft.

ARKANSAS

Calhoun—Samuel S. Alexander's Smythe 1, c ne ne 7-11-14, base anhydrite 2985 ft, dr 3274 ft. C. E. Murdock's Southern Kraft 1, nw nw 17-14-13, fsg td 3045 ft. **Columbia**—Atlantic's Levi Garrett 1, c nw sw 13-17-20, elev 364 ft, base anhydrite 3233 ft, top James lime 3767 ft, top Cotton Valley 5271 ft, dr 6640 ft. Petroleum Finance Co.'s Barnett 1, c nw se 14-17-20, rur. Standard of La.'s E. D. Harris 1, 15-17-19, dr 3562 ft. G. H. Vaughn's Levi Garrett 1, c se se 14-17-20, elev 232 ft, top James lime 3705 ft, top lower Marine 5315 ft, showed 36 stands oil, 6 stands brackish water 7443-83 ft, arr core ahead 7483 ft. Tidewater & Seaboard's J. T. Beene 1, c se nw 15-18-19, elev 232 ft, top Tokio 3040 ft, anhydrite 3398-3559 ft, dr 5985 ft. **Craighead**—Tenn-Ark Inc.'s Martin 1, 35-14n-3e, ruct, td 1754 ft. **Crittenden**—Stanley Oil Corp.'s D'Anner Hrs. 1, c 18-8n-9e, sd 3351 ft. **Little River**—Barbere et al's Mills 1, se sw nw 18-12-29, ru and sd. Clark et al's Strawn 1, se sw 20-10-32, woc 62 ft. Harford Oil Corp.'s Denning 1, ne sw 6-13-30, sd 1650 ft. D. L. Hersey et al's W. D. Waldrop 1, se nw 4-13-31, top anhydrite 2208 ft, sd 2210 ft. J. G. Strahan's Dierks Lbr. Co. 1, sw se 21-12-28, sd 3355 ft. **Lonoke**—Cabot Drlg. Co.'s Cabot Townsite 1, 18-4n-9w, sd 2330 ft. J. W. Anderson's Eddington 1, c nw ne 7-4n-9w, dr 910 ft, rock and sand. Hudson et al's Young 1, sw nw 8-3n-7w, sd 225 ft. J. F. Russell's J. T. Gunter 1, se se 17-5-10, sd 1650 ft. **Mississippi**—Benedum & Trees' Winston Mack 1, nw sw 3-15n-12e, 7-in csg 2897 ft, woc, td 3106 ft (corrected depth). **Pulaski**—Coker Oil Corp.'s Stone 1, 36-3n-11w, sd 905 ft. A. L. Kitselman's Fee 1, se sw 2-1s-13w, dr 3550 ft. **Union**—Fohs Oil Co. et al's Craig 1 (Union Sawmill fee), c se ne 5-18-14, elev 279 ft, Nacatoch 2202-2223 ft, dr 3570 ft.

CALIFORNIA

Los Angeles—Royal Land Co.'s No. 1, 8-4-17, dr 1120 ft. Richfield's Dominguez 1, 2-4-13, lcn. Mojave Pet. Co.'s Gorman 1, 5-8-18, wocs 312 ft; Jennings 2, 33-5-14, dr 200 ft. Continental's Newhall 1, 20-4-17, dr 200 ft. Newhall Drlg. Co.'s Needham 4, 13-3-16, co 3505 ft. British American's Pico 1, 12-2-12, dr 6714 ft. Tide Water Associated's Porter 1, 27-3-16, wocs 5393 ft. Texas Co.'s Anderson-Spring 1, 9-2-15, dr 4000 ft. **Orange**—New Fields' No. 1, 16-5-11, dr 3100 ft. A. V. Oil Co.'s No. 1, 16-6-10, wocs 4751 ft. **San Bernardino**—Southern Counties' Los Serranos 1, 22-2-8, dr 2210 ft. **San Diego**—Dauphin Dev. Co.'s Kelly 1, 16-12-4, fsg 625 ft.

SAN JOAQUIN VALLEY

Fresno—Pet. Securities Co.'s No. 86-12C, 12-20-15, lcn; No. 31-18F, 18-20-16, dr 6200 ft; No. 71-18F, 18-20-16, lcn. Standard's No. 71-13C, 13-20-15, grade; No. 82-13C, 13-20-15, running liner to complete 7041 ft. Superior's Cagle 1, 6-20-16, lcn. Standard's No. 1-17-F, 17-20-16, rig. Superior's Coalinga Fee 2, 7-20-16, grade. Shell's Coast Range 1, 17-19-15, r 2244 ft. Stuart Oil Co.'s Stuart 1, 12-21-14, dr 455 ft. Tide Water Associated's Fleishacker 57-1, 1-19-15, dr 5808 ft. Dauphin Dev. Co.'s Ragan 1, 19-21-14, dr 3789 ft. **Kern**—Ohio's KCL F-1, 10-31-25, dr 9150 ft. California Lands' Salisbury 1, 7-29-24, dr 5860 ft. Shell's KCL B-87-4, 4-30-25, dr 8575 ft. Gibson Oil Co.'s Alferitz 3, 14-25-18, preparing to test casing 1230 ft. G. W. Johnson's Brown-Paulette 1, 33-29-30, dr hard sand 1325 ft. G. E. Renner's R. H. L. 2, 27-30-30, dr 1815 ft. Richfield's Tupman-Western 1, 32-30-25, r 8315 ft. Shell's KCL A-58-8, 8-27-26, dr 5263 ft. Texas Co.'s Camp-West-Lowe 1, 7-29-27, fsg 10,122 ft. Petrol's Reserve-Petrol 33-5, 33-11-19, dr 6207 ft. Richfield's KCL 1, 28-11-20, r 7796 ft. Tide Water Associated's S. P. 2, 15-11-19, rig. Wilshire's Tejon 34-1, 34-11-19, rig. C. C. White's Armstrong 2, 9-26-26, rig. Framac's Brown 3, 22-27-27, co 1355 ft. Garner Bros.' Garner 1, 6-27-29, dr 600 ft. Julius Freid's No. 1, 34-32-24, dr 4485 ft. General Pet. Co.'s St. Helens 2, 12-28-20, wocs 968 ft. Continental's KCL E-1, 17-30-26, redrilled 8065 ft, td 8574 ft. Richfield's Union Avenue 1, 6-30-28, dr 6979 ft. Continental's KCL A-3-8, 8-27-4, perforating 5-inch casing 13,150 to 13,200 ft, td 13,644 ft. Seaboard-Associated's KCL C-1, 26-27-24, sd 13,064 ft. Standard's Mushrush 1, 7-27-24, dr 13,100 ft; KCL 8-B-1, 17-27-24, dr 13,200 ft. **Tulare**—Caminol's A.O.G. 1-9, 29-24-24, will convert to water well 9641 ft.

COASTAL COUNTIES

Santa Barbara—Richfield's Tinaquaic 1, 36-9-32, dr 400 ft. Barnsdall's Pezzoni 1, 15-8-32, fsg 4150 ft. J. E. O'Donnell's Helen 1, 8-7-33, wocs 4925 ft. Continental's La Laguna 2, 25-8-31, dr 3845 ft. General's La Laguna 1, 6-7-30, dr 2713 ft. **San Luis Obispo**—I. L. Burch's No. 3, 4-10-26, dr 200 ft. G. E. Renner's R. H. L. 1, 7-32-22, lcn. Eureka Pet. Co.'s Union 1, 27-26-13, wocs 150 ft. **Ventura**—High Mesa's Butcher 1, 16-4-22, dr 1730 ft. Claran Oil Co.'s Hardison 1, 22-4-20, wocs 410 ft. Commander's No. 7-F, 13-4-19, redrilling 575 ft. Merchants Pet. Co.'s Cochrane 8, 1-4-20, dr 1325 ft. St. Louis' Williamson 1, 1-4-20, dr 630 ft. El Rancho's Elkins 2, 9-3-19, grade. Texas Co.'s Shiells 135, 4-3-19, dr 4026 ft. Albatross' Scheiferle 1, 17-3-20, rig. Clipper's Calco 1, 17-3-20, rig. Texas Co.'s Richardson 5, 13-3-21, pumped 85 bbls daily 6702 ft. Colima Oil's Burge 2, 29-5-19, reperforated 2990-2440 ft, pumping 20 bbls 3485 ft. Section 20's No. 1, 20-5-19, dr shale 2225 ft. Hardison & Temple's No. 1, 22-4-21, wocs 656 ft. Stallings, Senter & Ahlburg's Stallings 1, 24-4-21, pumped water trace of oil 1445 ft. Ventura Drilling's Canet 1, 10-3-23, dr 1025 ft.

NORTHERN CALIFORNIA

Colusa—Amerada's C.L.C. 1, 34-16-1, dr 7581 ft. **Glenn**—Ohio's Willard 2, 18-20-2, pumping in mud 2253 ft. **Humboldt**—Texas Co.'s Eureka 2, 22-3-1, flowed mud and gas by heads 7708 ft. **Monterey**—Texas Co.'s Lewis 1, 1-19-5, dr 3905 ft. A. A. Anderson's Hillman 1, 15-24-14, co 4004 ft. L. B. Tannehill's Quinn 1, 35-20-8, dr 1420 ft. **Sacramento**—Superior's Reclamation Board 1, 7-3-3, dr 3258 ft. **San Mateo**—Wilshire's Cowell 2, 20-6-5, to run tubing 1605 ft. **Solano**—Richfield's Potrero Hills 1, 10-4-1, dr 5163 ft. **Stanislaus**—Orestimba Oil Co.'s Newman 1, 12-7-7, sd 790 ft.

FLORIDA

Levy—Fla. Discovery Oil Co.'s Sholtz 2, sw sw ne 9-15s-13e, top chalk 3110 ft, odor gas at 3853 ft, woc, td 3986 ft. **Nassau**—St. Mary's River Oil Corp.'s Hilliard 1, nw nw se 19-4n-24e, pulled csg set at 3935 ft, re-set csg, woc, td 4508 ft. **Polk**—Edw. A. Hill's Polk County Lbr. Co. 1, nw nw ne 32-25s-25e, dk. **Suwannee**—J. W. Phillips Oil Expl. Co.'s Shilkett 1, nw nw 14-4s-14e, spd and sd. Wm. G. Blanchard's Lucy Cotton 1, se ne 35-3s-11e, sd 203 ft for heavier ig.

ILLINOIS

Bond—Cole et al's Willams 2, nw nw se se 6-4n-4w, dr 250 ft. Lindsey Bros. et al's Butter 1, nec sw 31-4n-2w, dr 1000 ft. Thornwell Drlg. Co.'s Morris 1, nwc 16-6n-4w, fsg 165 ft. Huppard et al's Dresser 1, sw ne nw 21-6n-4w, dr 1745 ft. Elmor et al's Dilman 1, sw se sw 13-6n-2w, ur 740 ft. **Christian**—Swords & McDougall's Warren 1, nw se se 23-11n-1e, dr 1545 ft. **Clark**—Snavely's Handy 1, ne ne nw se 27-11n-1w, dr 1250 ft. **Clinton**—Farreley et al's Berginan 1, nw sw nw 30-1n-3w, so, sd 1345 ft. Martin et al's Rensing 1, sw se ne 35-1n-5w, dr 1275 ft, hfw. White et al's Wilton 1, sw se nw 19-3n-2w, dr 450 ft. **Coles**—Swearer & Crown Pet. Co.'s Sanders 1, sec nw 27-13n-8e, mim. Wafford & Andrews' 1, sec 21-11n-7e, dr 1875 ft. **Cumberland**—National Consumers' Harrison-Ward 1, ne se ne 17-9n-9e, td 1990 ft. **Edgar**—McMamara Const. Co.'s Blair 1, nw ne nw 24-14n-14w, testing so. Meyers' Brinkerhoff 1, c se se 26-13n-13w, dr 1350 ft. **Edwards**—Leach Bros.' Lee 1, sw ne se 11-1s-10e, dr 3600 ft. **Fayette**—Lindsey et al's Bowers 1, sw ne se 36-4n-1w, rust. Stevenson's Harkless 1, c ne se ne 30-5n-1e, lcn. Longoria's Brasch 1, nec sw 1-5n-2e, td 1790 ft. Hurricane Creek Oil Co.'s Eckard 1, c nw ne 15-6n-1w, dr 1435 ft. Putman et al's Farmer 1, c se se 35-6n-1w, td 1160 ft. Jarvis Bros.' School 1, swc 5-6n-3e, rur. Ketcherside & Fisher's Freeburg 1, nw sw sw nw 11-7n-1e, dr 750 ft. Simmell et al's Workman Estate 1, sw swc se 26-7n-2e, rog. Runwaldt & Johnson's Mautz 1, nw nw ne ne 28-7n-3e, wocs 1612 ft. Producers Oil Co.'s Farthing 1, nec 29-8n-1e, dr 300 ft. Continental's Bartlett 1, ne nw ne 30-9n-1e, dr 350 ft. Beck & Moore's Burrus 1, c se ne ne 27-9n-2e, pits. Ulrich & Pough's Durbin 1, c nw nw sw 30-9n-3e, rur. **Franklin**—Eason Oil Co.'s Orient Mine 1, 36-6s-2e, dr 3065 ft. **Gallatin**—Bailey & Lucas' Logan 1, se ne ne 21-8s-8e, hfw, td 1335 ft. **Jefferson**—Buell's Pitchford 1, swc nw 2-2s-1e, dr 250 ft. Allen's Puckett 1, ne nw nw 12-3s-2e, dr 1400ft. Benedum-Trees' Jeff O&G Co. 1, c nw ne 16-4s-2e, perforated with 92 holes, td 2958 ft. **Lawrence**—Rockstead's Ulrich 1, se sw ne 20-3n-13w, dr 700 ft. **Macoupin**—Dillon et al's Keele 1, sec ne 32-10n-9w, dr 210 ft. **Madison**—Callahan et al's Hall 1, sw ne se ne 1-3n-5w, dr 320 ft. **Marion**—Kiskaddon's Johnson 1, ne nw ne 32-1n-1e, dr 875 ft. Boyce's Stover 1, nec sw 30-1n-2e, dr 1100 ft. Oil Roy's Suggs-Meeker 1, sw nw nw 11-2s-1e, dr 1680 ft. Totum's Bockman Bros. 1, c ne ne 5-2n-2e, dr 1675 ft. Redwine's Pruden 1, swc nw 10-2n-2e, td 1974 ft, wocs. Coyer's Mulvaney 1, se ne se 6-2n-4e, dr 1960 ft. Conrey & Griffin's Bilek 1, nwc ne 26-4n-2e, dr 1000 ft. **Massac**—Kahle et al's Harvick 1, swc 23-14s-3e, dr 2950 ft. **Menard**—Scroggins' Fee 1, c sw sw 24-19n-5w, dr 1600 ft. **Montgomery**—Swords & Dougal's Ohman 1, sw nw nw 10-10n-1w, dr 1250 ft. **Morgan**—Alexander Oil Co.'s Gray 1, e½ nw ne 25-15n-9w, dr 1500 ft. **Moultrie**—Neeley et al's Guman 1, sw nw ne 18-13n-6e, cored 1738 ft. **Piatt**—Pray's Baker

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*	owdd—*old well drilling deeper.*
‡—*salt water (completions).*	owpb—*old wel plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million feet of gas.*	r—*reaming.*
abd—*abandoned.*	rog—*rig on the ground.*
bbls—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
bs—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	so&g—*show oil and gas.*
fsg—*fishing.*	spd—*spudding.*
ft—*feet.*	sr—*straight reaming.*
hfw—*hole full of water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*wailing on cemen. to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig.*
n, s, e, w—*north, south, east, west.*	
oih—*oil in ho'e.*	

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1, sw ne ne 17-18n-6e, dr 2925 ft. **Randolph**—Badger Oil Co.'s Schroeder 1, se nw nw 27-6s-6w, dr 975 ft. **Richland**—Leathers' Yonaka 1, c nw se sw 22-2n-14w, dr 300 ft. **Saline**—Carpenter et al's Sloans 1, sec sw 32-7s-6e, sd 1739 ft, hfw. Flagherty & Wayneberg's Choisser 1, ne nw nw 5-8s-7e, sd 1045 ft, hfw. **Sangamon**—Morris et al's King 1, nw ne se 24-15n-7w, co, td 1385 ft. **Shelby**—Kingwood's Vogel 1, c se ne nw 1-9n-4e, lcn. Jolly's Jenkins 1, se sec 26-10n-4e, ur 1521 ft. Fredrick et al's Fluge 1, c n½ ne nw 34-10n-5e, rur. **St. Clair**—Badger Oil Co.'s Reichert 1, nec 3-1s-10w, td 105 ft. **Wayne**—Robinson et al's Acola 1, nw nw ne nw 31-2s-6e, otd 3042 ft, pb 2584 ft. Weinert's Sprague 1, c n½ nw se 4-2s-7e, coring 3182 ft. Weinert's Smith 1A, nec nw 21-2s-7e, dr 2525 ft. Dennis' Dickey 1, nw nwc se 26-2s-7e, rog. Martin & Stoker's Shaeffer 1, nw ne nw nw 8-2s-8e, wocs 150 ft. Bruce's Holland 1, c s½ nw nw 5-3s-7e, dr 2835 ft. Lake & Allen's Hazel 1, c ne nw 22-2n-9e, dr 1875 ft. **Williamson**—Geo. Oil Syndicate's Scott 1, sw se sw 4-10s-2e, dr 1765 ft.

KANSAS

Barton—Shaffer's Barret 1, sw nw 28-16-14w, dr 2145 ft. Carlock and Atlantic's Demel 1, ne nw 30-17-13w, dr 2798 ft. Long & Johnson's Eveleigh 1, sw ne 3-18-14w, co 2630 ft. Newton & Clyde et al's Hagen 1, sw sw 20-20-11w, lcn. **Butler**—Stewart & Gross' Semisch 1A, nw se sw 34-27-7e, dr 1475 ft. **Cowley**—Gralapp and Continental's Community 1, nwc 23-32-5e, dr 2885 ft. **Grant**—Panhandle Eastern's Towler 1, cse¼ 20-30-37w, wocs 546 ft. Joyce 1, c se¼ 36-30-37w, dr 2540 ft. **Harvey**—Derby and Gary Drlg. Co.'s Jones 1, cel ne nw 7-22-1w, rur. **Marion**—Cox & McGinnis and Saco Oil Co.'s Jolliffe 1, c s½ sw se 2-22-5e, dr 1125 ft. **McPherson**—Western Kansas O. & R. Co. et al's Union 1, nw ne sw 18-17-1w, co 1682 ft. Marylyn Oil Co.'s Dixon 1, nw ne nw 7-19-12w, ur 2760 ft. **Ottawa**—Babcock's Copeman 1, cnl s½ s½ se 7-10-2w, fsg 2675 ft. **Pottawatomie**—Turner et al's Unshide 1, c ne nw 32-8-9e, run 8-inch 1275 ft. **Reno**—Garden's Stricker 1, nw 17-22-6w, dr 3295 ft. **Rice**—Spurrier & Bruce's Cary 1, ne nw nw 30-18-8w, dr 1640 ft. Glimax Oil Co. et al's Malone 1, se sw nw 36-20-10w, dr 2585 ft. **Rooks**—Producers' Ham 1, sw nw 25-7-19w, co 1800 ft. Phillips' Tangly 1, c nw sw 25-8-18w, dr 1600 ft. **Rush**—Cities Service's Samuelson 2, c ne¼ 36-11-17w, wocs 1156 ft. **Russell**—Yankey & Stearnes' Krog 1, nw se nw 7-15-13w, run 8-in 2200 ft. Southern's Sellens 1, swc 22-15-13w, wocs 267 ft. Western Kansas O. & R. Co.'s Schneider 1, ne nw 35-15-14w, so to test. **Sedgwick**—Crowe et al's Murphy 1, sw se 34-29-1w, dr 2910 ft. **Thomas**—Ramsey Pet. Co. & Mabee's Ryan 1, c ne se 27-8-32w, fsg 4010 ft.

NORTH LOUISIANA

Bienville—Producers O&G Co.'s (Hall et al), Graves & Thomas 1, se sw se 23-15n-10w, woc 180 ft. **Caddo**—Arkansas Fuel Oil Co.'s Webb 1, c nw sw 4-16-13, rur. J. Thomas Driscoll, Inc.'s Woolworth 1, 19-18n-14w, rur. R. L. Bauman's Slattery Est. 1, nw nw 35-18n-14w, blew out making gas at 2850 ft, killed, dr 5365 ft shale and lime. Oils, Inc.'s A. Cazaux 1, 10-16n-13w, sd for heavier rig 3502 ft. R. E. Allison State 1, se se 28-18n-14w, elev 175 ft, top massive anhydrite 4337 ft, completed 103 bbls distillate, 3,676,000 cubic ft gas daily, td 5569 ft. Hollywood Oil Corp.'s C. & B. Realty Co. 1, c ne ne 22-17n-14w, trying to run formation tester in Jeter horizon, td 6020 ft. Hall & Smith's Fee No. 1, se ne 5-17n-14w, lcn. Rodessa O&G Co.'s Chandler 1, 34-18n-14w, dr 3586 ft. J. Weil's Dreyfuss 1, 20-18n-14w, lcn. R. O. Carter et al's Marks Meyer 1, 34-18n-14w, lcn. J. T. Parks et al's Grayson 1, se se 39-19n-15w, spd. **Caldwell**—Oakes et al's Kyle 1, ne sw ne 18-11n-3e, sd 470 ft. **Catahoula**—Sibley-Sabine Oil Corp.'s Peck 1, 36-10n-8e, sd 2020 ft. **Claiborne**—E. T. Oakes et al's E. C. Kilgore 2, nw se 28-21n-5w, cored 7 ft saturated lime, 7-in csg 5288 ft, testing, td 5317 ft. **De Soto**—Samuel S. Alexander's Stell A-1, ne ne 5-12n-16w, cored sandy lime so 2740-60 ft, 7-in csg 2710 ft, swabbing oil, est 2 mil ft gas daily, td 2761 ft. A. L. Sutton et al's Frost Lbr. Co. 1, ne se 35-11n-15w, spd and sd. **Natchitoches**—J. E. Popkins' Peavy-Wilson Lbr. Co. 1, 36-7n-9w, sd 300 ft. **Red River**—J. M. Forgotson's J. G. Marston 1, se se 30-14n-10w, top Nacatosh 960 ft, 7-in csg, td 1074 ft, sw abn, td 1713 ft. **Sabine**—W. L. McClanahan's Frost Lbr. Co. 1, 22-9n-13w, hf fluid pumping est 40 bbls oil daily after acidizing at 1616 ft, old td 5709 ft. LeGrande et al's Tatum 1, nw ne 17-8n-13w, so in chalk acidized, testing, td 2340 ft. Tropical Oil Co.'s Long-Bell 1, 5-8n-13w, arr deepen 3507 ft. Zwolle Synd.'s (Moffitt et al), Mansfield Hdw. Co. 1, ne ne 8-7n-14w, sd 4325 ft. Geo. L. Pace's Logan 3, sw nw 26-10-13, acidized, wosr, td 1952 ft. **Tensas**—H. V. Schumacher's Mounds 4, 39-11n-12e, owdd 1750 ft. **Webster**—Magnolia's Pardee C-1, c nw ne 17-23n-11w, elev 203 ft, swabbed dry, so 6025 ft, top Travis Peak 6054 ft, top lower Marine 8046 ft, cored 6 ft sand, so 8504-10 ft, cored 8510-18 ft, no recovery, dr 8651 ft; Branton 1, ne sw ne 6-22n-9w, 13⅜ in csg 846 ft, dr 1800 ft. Sibley-Sabine Corp.'s McDonald 1, elev 232 ft, c nw nw 32-17n-9w, top Nacatoch 1197 ft, chalk 1415-1730 ft, dr 4295 ft.

SOUTH LOUISIANA

Assumption—Humble's Milliken & Farwell 1, Labadieville area, 15-14s-14e, dk. **Avoyelles**—Magnolia's Bowden 1, Evergreen area, 7-2s-4e, dr shale 8179 ft. **Beauregard**—Republic's Lutcher Moore 1, Mistic area, 14-7s-2w, dr shale 8245 ft. **Calcasieu**—Sun's Lutcher Moore 2, Lunta area, 12-8s-13w, pb from 8951 ft. **Cameron**—Federal Royalty Co.'s State 2, Calcasieu Lake, 13s-9w, lcn. Humble's Hanszen 2, Chalkley area, 9-12s-6w, woo 8569 ft. Pure's Calcasieu National Bank 3, Lowry area, 19-12s-4w, dk. **Iberia**—Texas Co.'s State 5, Fausse Point, 35-11s-8e, dr shale 5200 ft. **Iberville**—The California Co.'s Schwing Lbr. Co. 1, Bayou Sorrel area, 96-10s-10e, lcn. **Lafourche**—Texas Co.'s La Terre Co. 1, Golden Meadows, 1-20s-21e, preparing to test 9900 ft; same operator's State Catfish Lake 1, Golden Meadows, 77-19s-21e, lcn. **Orleans**—W. T. Burton's State 1, Lake Ponchartrain, 10s-13e, dr shale 8357 ft; same operator's Faubourgde Montelusin B-2, Lake Ponchartrain, 11s-13e, dr shale 8256 ft. **St. Bernard**—Gulf's State RR 4, Lake Borgne, 12s-15e, dr sticky shale 5231 ft. **St. James**—Shell's Schexneyder 1, LaPice area, 38-12s-15e, dk sd. **St. John The Baptiste**—Shell's Godchaux Sugar 1, LaPlace area, 97-11s-7e, testing 8400 ft. **St. Landry**—Herton's Thistlewaite Lbr. Co. 1, Beggs area, 60-4s-4e, dr shale 10,219 ft. **St. Martin**—Shell's Hazel Burdin 1, Lake Verret, 15-13s-12e, dr shale 8698 ft. Texas Co.'s St. Martin Land Co. 11, Henderson, 21-8s-7e, sd 9404 ft; same operator's State 6, Lake Mongouloui, 10-10s-9e, taking side wall cores 9858 ft. **Terrebonne**—Shell's Peters 1, South Houma, 73-18s-18e, dr shale 11,050 ft. Texas Co.'s Continental Land & Fur Co. 1, Bayou Penchant, 29-18s-14e, fsh 10,039 ft; same operator's State 2, Coon Point, 22s-14e, piling. **Vermilion**—Stanolind's F. Stovall 2, Intra-Coastal City, 88-14s-3e, dr shale 6543 ft.

MICHIGAN

Allegan—Hilliard's Rankin 1, 10-1n-11w, sd 6-in csg 1434 ft. McClanahan's Johnson 1, 3-2n-11w, sd 1390 ft. Daily's Cutler 1, 16-2n-12w, Antrim 1410 ft, dr 1480 ft. **Arenac**—Bartlet's Clement 1, 6-18n-4e, dr 1600 ft. **Barry**—Schelling's Smith 1, 9-1n-8w, lcn. Colin's Simmons 1, 3-4n-10w, so 1940 ft, sd 1942 ft. **Bay**—American's Hecht 1, 10-15n-3e, Dundee 3051, so 3128 ft, sw 3255 ft, sd. Gulf's Bateson 1, 2-14n-4e, dr 1390 ft. **Calhoun**—Verona's Fruin 1, 29-1s-7w, dr 2300 ft. **Gladwin**—Bridger Basin's State 1, 29-19n-2e, dr 1900 ft. **Huron**—Leonard's Milling 1, 10-16n-15e, dr 3570 ft. **Isabella**—Gulf's Hauck 1, 13-15n-5w, dr 600 ft. **Kent**—MacCallum's Story 1, 32-7n-12w, Traverse 1865-72 ft, so 1872-77 ft, td 1992 ft, tst. **Lapeer**—Hether's Foster 1, 26-9n-12e, Dundee 2140 ft, Monroe 2327 ft, sw 2870 ft, sd 2881 ft. **Leelanau**—Lupher's Wilee 1, 34-28n-14w, dr 510 ft. **Mackinac**—Van Kuren's Hiawatha 2, 27-44n-9w, dr 620 ft. **Mecosta**—Gulf's Stillwell 1, 20-15n-9w, dr 200 ft. **Midland**—Andrews' Harris 1, 14-16n-1e, rig. Weller's Hepinstall 1, 9-13n-2e, dr 290 ft. Stork's Steger 1, 23-15n-2e, dr 3300 ft. Fortney's Sias 1, 19-14n-2e, dr 2300 ft. **Missaukee**—Moser's Scherenhelm 1, 36-23n-7w, rust. **Ogemaw**—Molloy's Morrison 1, 29-23n-3e, dr 2100 ft. Rowmor's McBain 1, 27-21n-1e, dr 1100 ft. Caldwell, Inc.'s State 9, 6-22n-1e, dr 1250 ft. **Osceola**—Fortney's Beall 1, 25-8n-9w, dr shale 3800 ft. Champion's Ealy 1, 30-20n-8w, fsg 850 ft. Franklin's Johnson 1, 26-19n-7w, dr 1800 ft. **Otsego**—Summer's Geraldine 1, 28-30n-3w, dr 1700 ft. Snow's Moore 1, 13-29n-2w, dr 1400 ft. Barton's Yuill 1, 9-32n-3w, sd 1431 ft. **Ottawa**—Sommerville's Bowman 1, 19-7n-14w, dr 1735 ft. **Roscommon**—Kirkham's Helen 1, 36-22n-2w, dr 3770 ft. **Saginaw**—Darke Brother's Bell 1, 31-12n-3e, dr 550 ft. **Van Buren**—Whitehill's Webster 1, 35-2s-16w, Sylvania 1939, dr 2055 ft. Ross' Landrus 1, 11-1s-15w, dr 382 ft. Gulf's Wasylenke 1, 23-4s-15w, dr 1100 ft.

MISSISSIPPI

Calhoun—L. C. Lucas' E. C. Boland 1, sw se 9-22n-9e, sd 760 ft hd gmbo. **Claiborne**—Claiborne County Dev. Co.'s Ruth Hayden 1, s½ se 55-11-2e, rur to deepen, td 2950 ft. **Clarke**—J. L. Ryan's C. C. Eddins 1, sw sw 29-2-14, rur. **Hinds**—Cleve Love et al's S. F. Johnson 1, ne se 29-6n-1w, elev 343 ft, cored hd porous sand 3796-3822 ft, dr 4251 ft shale. Southern Nat. Gas Co.'s Progressive Realty Co. 1, se sw 35-6n-4w, top red beds 7970 ft, dr 8165 ft, hd lime. G. Jeffrey's Gaddis Farms 1, nw se 26-7n-4w, sd 3448 ft. **Montgomery**—Dr. T. A. Chichester et al's E. C. Mitchell 1, se nw 30-20n-7e, dk. **Pontotoc**—Waldrop et al's Bray 1, se n½ sw 17-11s-1e, sd 288 ft. **Simpson**—Cleve Love et al's Garner 1, sw ne 1-10n-17w, sp and sd. **Wilkinson**—La. Crusader Oil Inc.'s Miss-Wis L&T Co. 2, sw ne 35-4n-1w, sd 3395 ft, black shale. **Yalabousha**—Acme Holding Co.'s S. D. Boyle 1, nw nw 33-25n-7e, sd 2790 ft. Chas. W. Crader's Jno. Bruce James 1, ne ne 24-11s-6w, spd and sd, mir.

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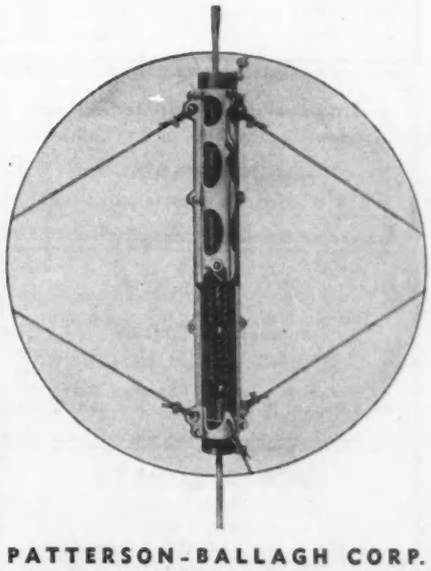

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OKLAHOMA

Beckham—McWhirter's Fee 1, nw sw sw 34-8n-19w, dr 2190 ft. **Cleveland**—Big Chief Drlg. Co. and Gulf's Strategier 1, nwc sw 25-9n-2w, dr 6540 ft. **Comanche**—Eldridge's Aetna Life 1, sw se sw 2-1n-10w, dr 1545 ft. **Garfield**—Hughes Drlg. Co.'s Meisner 1, c ne nw 10-20n-4w, mirt. **Grady**—Parsons' McKenney 1, 8-3n-8w, dk. Carter Oil Co. et al's Smith 1, c se sw 25-5n-8w, dr 4570 ft. **Hughes**—Phillips' Molder 1, se sw sw 1-6n-10e, dr 1875 ft. Doup et al's Bond 1, nec sw 7-7n-9e, dr 2080 ft. **Jackson**—Lippert et al's Howard 1, ne sw nw 10-3n-19w, dr 1510 ft. **Kay**—Hamilton's Riddle 1, nwc 3-26n-4e, dr 1475 ft. Crawford et al's Boehl 1, sec nw 34-27n-2w, fsg 550 ft. Atlantic's Watson 1, sec nw 28-28n-1w, td 841 ft. Tidewater Associated Oil Co.'s Hickman 1, nwc ne 19-28n-1e, dr 3055 ft. Little's Prunty 1, nec sw 33-28n-3e, machine. **Kiowa**—Crawford & Zelliff's Kimray 1, swc nw 36-5n-18w, td 305 ft. **Lincoln**—Summit Drlg. Co.'s Gordon 1, nec 27-17n-2e, rur. **Logan**—Continental et al's Doanhoe 1, nw sw 16-18n-2w, dr 3965 ft. **Noble**—Hollenback et al's Mathews 1, c sw nw 9-20n-1e, dr 4935 ft. Phillips et al's Robertson 1A, nw ne sw 29-24n-1w, rur. **Okfuskee**—Lease Inv. Co.'s Fee 1, se sw se 21-13n-10e, td 2360 ft, run 8-in csg. **Oklahoma**—McClennan et al's Rodesney 1, c w½ sw ne 27-11n-2w, rog. **Okmulgee**—Jim Wise Drlg. Co.'s Morrow 1, sw nw ne 16-15n-13e, lcn. **Payne**—Starr et al's McKenzie 1, swc ne 3-18n-3e, pits. **Pittsburg**—Campbell's Featherstone 1, c n½ nw sw 19-3n-12e, dr 510 ft. Supreme Oil Co.'s Stevenson 1, swc se 27-3n-14e, td 1300 ft, mirt. **Seminole**—Smith's Wolfe 1, nec sw 36-7n-5e, td 2987 ft, to shoot. **Washita**—Continental's Proctor 1, c nw¼ 28-10n-20w, dr 8335 ft.

WEST TEXAS

(This report is confined to the north portion of the Permian basin.)

Andrews—Fuhrman Pet. Corp.'s G. O. Ashton 1, c se se PSL sec 12, blk A-42, elev 3181 ft, top anhydrite 1640 ft, td 4492 ft, flowed 15 bbls per hr, plus 55% water. Anderson-Prichard Oil Corp.'s W. F. Cowden-strip 1, sec 102, cem cas 1650 ft; Cowden 2, cem cas 1656 ft; Cowden 3 and 4, spd and sd. S. H. Forgeron-Olson Drl. Co.'s Lockhart-Brown 1, c ne ne PSL sec 20, blk A-41, elev 3248 ft, salt series 1690-2720 ft, top brown lime 3995 ft, sul w 4913-81 ft, pb to 4770 ft, sdo. Great Western Producers, Inc.'s Holt 1, c ne ne T&P sec 43, T-2-N, top anhydrite 1765 ft, top salt 1783 ft, rust, td 4065 ft. Montecito Oil Corp.-Rhodes et al's E. Cowden-Sinco 3, near nwc T&P sec 1, blk 44, T-2-N, pay 4163-85 ft, dr with 3500 ft oih. Rogers & Rogers' University 1, near c e½ sw¼ sec 40, blk 9, elev 3149 ft, top anhydrite 1750 ft, top Yates 2930 ft, top lime 4020 ft, flowed sul w 4539 ft, may pb. Superior Oil Co. (Cal.'s), University 1, sec sec 35, blk 10, elev 3176 ft, top anhydrite 1640 ft, top Yates 2740 ft, pay 4185-4227 ft, flows by heads after acid. The Texas Co.'s University 1-H, nw ne se sec 4, blk 14, elev 3165 ft, top anhydrite 1670 ft, top Yates 2790 ft, dr lime 4230 ft. J. W. Tripplehorn et al's M. A. Thornberry 1, nec PSL sec 2, blk A-42, top salt 1790 ft, top Yates 2840 ft, making gas, dr 4280 ft. H. C. Wheeler et al's Farmers State Bank (Carlton)-Gulf 1, c se sw PSL sec 18, blk A-36, elev 3207 ft, top anhydrite 1880 ft, top Yates 2930 ft, top lime 4030 ft, cored oil stain 4448-74 ft and dead oil 4544-54 ft, coring 4555 ft. L. H. Wentz et al's W. F. Cowden 1, nec T&P sec 3, blk 43, T-1-N, top Yates 2780 ft, rust 4040 ft. **Cochran**—Magnolia's Della Wright 1, nec labor 7, league 96, Mills C.S.L. sur, elev 3784 ft, top brown lime 3650 ft, top solid lime 3980 ft, dry and abd 5054 ft. T. G. Shaw Oil Corp.'s C. S. Dean-Texas Co. 1, s¼ league 94, Mills C.S.L. sur, lcn. The Texas Co.'s H. T. Boyd 1, center labor 25, league 56, Oldham C.S.L. sur, dr 2660 ft. **Dawson**—Ray Albaugh et al's D. Hogg 1, c se se T&P sec 17, blk 34, T-4-N, elev 2895 ft, top anhydrite 1550 ft, sd 4125 ft. **Gaines**—Atlantic Ref. Co.'s Parker Bros. 1, c se ne W. T. Ry. sec 264, blk G, elev 3348 ft, top anhydrite 2140 ft, top Yates 3255 ft, top brown lime 4270 ft, dry and abd 5290 ft. Duff & Pittman's G. Crain-Ohio 1, c e½ sw nw W. T. sec 216, blk G, sp and sd. Magnolia-Atlantic's Havemeyer-Jenny 1, c sw sw W. T. sec 219, blk G, sd repairs 4030 ft. **Garza**—Gulf Oil Corp.'s S. P. Swenson Cattle Co. 1, c nw H&GN sec 25, blk 2, elev 2274 ft, trace oil 6277 ft, passed up good oil shows, coring Ordovician lime 7940 ft. **Hockley**—Murchison et al's Alex Slaughter-Snowden-McSweeney 1, nec labor 19, league 37, Zavalla C.S.L. sur, mim. Snowden-McSweeney Co.'s Alex Slaughter 1, nwc lse, labor 74, league 35, Zavalla C.S.L. sur, elev 3509 ft, top solid lime 4210 ft, pay 5055-94 ft, used 3500 gals acid, testing. The Texas Co.'s Mallett L&C Co. 1-B, swc labor 1, league 52, Scurry C.S.L. sur, elev 3569 ft, top anhydrite 2290 ft, top Yates 2850 ft, top brown lime 3780 ft, top solid lime 4180 ft; Bob Slaughter 3, nwc labor 66, league 39, Maverick C.S.L. sur, elev 3547 ft, top anhydrite 2180 ft, top salt 2270 ft, top Yates 2770 ft, pay 4930-84 ft, used 6000 gals, flowed 115 bbls oil 7 hrs; Slaughter 4, mim. **Kent**—B. Dolman et al's C. V. O'Keefe 1, ne ne nw H&GN sec 50, blk 1, sd 300 ft. Ray Dawson et al's Haggins 1, near c nw ne H&GN sec 118, blk 1, sp. **Lynn**—J. L. Baldridge et al's Alamo Lumber Co. 1, ne sw sw HE&WT sec 151, elev 3267 ft, top anhydrite 2130 ft, top Yates 2900 ft, top San Andreas 4170 ft, sd for 5½-in cas, td 4450 ft. **Martin**—T. G. Shaw Oil Corp.'s H. N. Wilkinson 1, ne ne se sec 35, blk A, Bauer-Cockrell sur, dr 2085 ft. **Yoakum**—Honolulu Oil Corp.'s R. M. Kendrick 1-M, sw ne sw sec 825, blk D, elev 3567 ft, top Yates 3070 ft, top brown lime 4040 ft, top solid lime 4510 ft, oil pay 4983-5162 ft and water zone 5162-69 ft, pb to 5155½ ft, testing. J. E. Mabee et al's W. N. Willard 1, nec nw¼ sec 741, blk D, top anhydrite 2340 ft, dr 2360 ft. H. K. Riddle-S. C. Yingling's N. Barrier-Gulf 1, c ne se sec 6, blk D, elev 3564 ft, top anhydrite 2640 ft, top Yates 3440 ft, sd 5501 ft. Shell's J. M. Rutts 1, sw nw nw sec 743, blk D, elev 3544 ft, top anhydrite 2380 ft, dr 4030 ft; Waples-Platter Co. 1, c ne sec 616, blk D, lcn.

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EAST TEXAS

Cherokee—Bunn Drl. Co. et al's Bowlin 1, W. H. Walters sur, 2½ mi se Lone Star, elev 397 ft, Pecan chalk 3060-3374 ft, Austin chalk 3826-4005 ft, top Woodbine 4005-4010 ft, pb to 4008 ft, tests 5 bbls fluid per hr, 28 percent water; C. Bounds 2 (95.9-ac), W. H. Walters sur, 2½ mi se Lone Star, elev 346 ft, cut fault 3535-45 ft, Austin chalk 3787-3969 ft, top Woodbine series 3969 ft, td 4085½ ft, sd. C. C. Lanier et al's A. T. O'Neal 1, lcn. **Freestone**—G. Shyrock et al's M. S. Clark 1 (122-ac), M. De Cantona sur, 8 mi nw Teague, elev 521 ft, top Woodbine series 3700 ft, dry and abd 4145 ft. J. L. Collins & Co.'s F. E. Hill 1 (150-ac), T. Dubronner, Jr. sur and J. Y. Aguilera league, 15 mi e Fairfield, rig. **Henderson**—D. T. Davis et al's J. P. Tarkington 1 (39-ac), W. K. Newell sur, elev 298 ft, top Pecan chalk 1620 ft, Austin chalk 2400-2555 ft, top Woodbine series 2974 ft, sand 3020-23 ft, testing. E. T. DeArman et al's J. R. Tarkington 1, W. K. Newell sur, elev 320 ft, top Woodbine 3043-56 ft, flowed 56 bbls oil, plus 20 percent w initial on ⅛-in choke. Humble-Tide Water-Seaboard's S. S. McGee 1 (342-ac), R. Acosta sur, Opelika Trinity test, rur. Peyton Bros. et al's W. W. Carter-Tarkington 2, W. K. Newell sur, elev 326 ft, rig. The Texas Co.'s J. P. Tarkington 1 (50-ac), W. K. Newell sur, elev 295 ft, top Woodbine 2970 ft, sand 3016-25½ ft, flowed 85 bbls net oil, plus 20 percent water initial. **Houston**—Humble's M. B. Hill 1 (160-ac), J. L. Reviere sur, A-49, Navarro Crossing, Pecan chalk 4220-4380 ft, Austin chalk 5240-5557 ft, top Woodbine 5741 ft, top oil sand 5874 ft, w.s. 5891-96 ft, gun-perforated 6 shots 5880-82 ft, flowed 5.41 bbls 34.3° oil per hr 3/16-in choke; H. Dailey 1 (68-ac), J. G. Thompson sur, dk. J. G. Mayo et al's A. Warrock 1 (106-ac), J. Sheridan sur, 1½ mi e by s Percilla, elev 378 ft, Pecan chalk 4695-5070 ft, Austin chalk 5529-5840 ft, Woodbine sand 5885-90 ft, dry and abd. **Kaufman** — Sam Knoerr et al's J. P. Hunter 1 (17-ac), P. Walker sur, 5 mi s Terrell, dk. W. S. McGee et al's Pritchett 1 (15-ac), J. Hendricks sur, 7 mi w Mabank, Austin chalk 2092-2470 ft, top Woodbine 2294 ft, sd 3104 ft. J. F. McLaughlin et al's Wood-Nash 1, J. C. Cortez sur, ¾ mi se Scurry, dk. **Lamar**—Dahl Bros. & Barr's Lewis-McCuiston 2 (10-ac), R. Russell sur, 1 mi ne Paris, elev 523 ft, sp and sd. **Leon**—Lone Star Gasoline Co.'s Steve Pate 1, D. J. Haskins sur, 8 mi se Buffalo, elev 355 ft, top Woodbine series 5609 ft, broken gas pay 5631-76 ft, w.s. 5748-82 ft, initial production 115,000,000 ft gas open 2-in tubing, closed pressure 2285 lbs. T. J. Tucker et al's Sam Vane 1 (60-ac), Jas. Webb sur, 4½ mi se Keechi, elev 403 ft, Pecan chalk 3961-4160 ft, Austin chalk 5000-5290 ft, top Woodbine series 5492 ft, top sand 5503 ft, w.s. 5585-5630½ ft, gun-perforated 5576-82 ft, tested water, perforated 5534-44 ft, testing. **Rains**—McKinley & Hastings' McTaggert 1 (21-ac), B. Miller sur, 1 mi w Emory, lcn. **Red River**—Bentley-Sheppard & Stevens' Southern Pine Lumber Co. 1, Geo. S. Parks sur, 17 mi n Clarksville, sd 71 ft. Daniels et al's J. J. Gaston 1 (657½-ac), J. Guest sur, 2 mi s Detroit, elev 468 ft, sd 1109 ft. Watters et al's J. Phamplin 1, Wm. Moore sur, 3 mi se Kanawha, elev 470 ft, Pecan chalk 78-85 ft, top Red Beds 450 ft, sd 780 ft. C. E. Whitehead et al's R. H. Ringwald 1 (56-ac), A. Moore sur, 1 mi nw Manchester, sd 630 ft. Texas Trading Co.'s Southern Pine 2, D. D. Bruton sur, elev 407 ft, top Georgetown 693 ft, base massive anhydrite 1823 ft, td 2155 ft, gun-perforated 2120½-25½ ft, tested show oil with water. **Rusk**—Drake Drl. Co.-T. L. Johnson's R. L. Needham 1 (136-ac), Jessie Chambers sur, 3 mi sw Lanesville, elev 319 ft, dk. **Smith**—J. H. Thomason et al's J. W. Bartlett 1 (112.84-ac), R. G. Stewart sur, ½ mi se Jamestown, dr 1200 ft. **Van Zandt**—W. S. King et al's Edna Watson 1, M. C. Whitaker sur, 5 mi s Grand Saline, elev 489 ft, sd 2600 ft. F. A. Richardson et al's B. C. Dodd 1 (180-ac), T. W. Hutchinson sur, 2 mi s Grand Saline, elev 427 ft, td 4278 ft, pb to 4050 ft, sd.

EAST TEXAS BORDER COUNTIES

Cass—Bateman Drlg. Co.'s Jaynes 1, A. Douthette sur, dry abn 6505 ft (contract depth). **Harrison** — R. S. Barnwell's Mrs. Luther Smith 1, A. D. Hope sur, elev 185 ft, dr 1520 ft chalk. **Marion**—Vestal et al's Moseley 1, D. Lane sur, sd 2768 ft. **Panola**—E. P. Pewitt et al's Rushing 1 (751-ac), Mannan Smith sur, lcn. **Sabine**—Hugo Allen et al's Brooks 1, Isaac Lowe sur, sd 5885 ft. **Shelby**—Grady H. Vaughn's Pickering Lbr. Co. 1, Brooks sur, rur. Redditt et al's Pickering Lbr. Co. 3, Snyder sur, 10-in csg 1189 ft, dr 3689 ft.

SOUTH TEXAS

CORPUS CHRISTI DISTRICT

Calhoun—Hiawatha's Roemer 2, Ogsberry sur, dr 9065 ft. **Hidalgo**—Harding's Card 1, Hidalgo Canal Co subd, woc, td 7507 ft, recemented. Phillips' Flores 1, por 39, dr 9100 ft. **Jackson**—Texas' Weed 1, Newell sur, cor 7515 ft. **Jim Wells**—Magnolia's Garcia 1, La Anima Sola gr, woc, 8202 ft; Maunz 1, Los Olmos y Loma Blanco gr, lcn; Moreno 1, King ranch, dr 3400 ft. Presnall & Tsesmelis' Hoffman 1, Los Presenas gr, dr 5400 ft. Shell's Blucher 1, Best sur, may dd, ds out of hole, td 7318 ft. Smith & Storey's McGill 3, Baldwin sur, dr 2000 ft. Transwestern's Dunlap 1, sur 181, taking sidewall cores, td 6509 ft; Seeligson 1, Haldeman subd, lcn. **Nueces**—Humble's Michalek 1, sec 97, ru. Phillips' Mastin 1, sec 146, dr 6550 ft. Seaboard's Wilson 1, Herrera gr, dr below 1400 ft. Stanolind's Clark 1, Herrera gr, dk. Texas' Little 1, sur 59, still cutting out ds, td 7746 ft. **Refugio**—Austin & Heard's Hunsdon 1, Esteban Lopez sur, dr 6800 ft. Darby's Rooke 1, Cobian sur, dr 5900 ft. **Victoria**—Wellington's Boothe 1, J. RR Co. sur, dr 2000 ft.

LAREDO DISTRICT

Bee—Aid's Hall 3, Kerr sur, ru. Chapman Minerals' Ablinger 1, Ryan sur, dr 3650 ft. Mayo & Chapman's Sparkman 1, Walker sur, dr 3850 ft. Zock's Ray 1, 14 mi nw Beeville, lcn. **De Witt**—Howeth's Albrecht 1, Ramos sur, prep mim. **Duval**—Magnolia's Duval 1, lot 26, league 101, dr 775 ft; DCRC 1, sec 189, mir. Schwab & Trinity's Welder 1, sur 103, dr 900 ft. Texas Inland's Adami 1, sur 47, lcn. Thompson's Parr 1, sur 118, testing, 4925 ft. **Goliad**—English's Wiess 1, Litts sur, ru. Steinberger's Alberecht 1, Hancock sur, cor below 4885 ft. Sun's Shaper 1, Payne sur, cor below 8120 ft. **Jim Hogg**—Goldston & Fox' Canales 1, Hinojosa gr, cor below 4800 ft. Humble's Bass 3, San Rafael gr, spdg. **Karnes**—Fomax' Pfluger 1, Seguin sur, sp. Karnestex' Yanta 1, Hardaway sur, reinstated, will dd below 1575 ft. Suttle's McKinney 1, Navarett sur, ru. **La Salle**—Lake-Tobian's LaSalle 1, Emory sur 988, dr 2450 ft. **Live Oak**—Holland's West 2, Ragland sur, sd, ran electrical formation tester, td 4356 ft. Luling's Northern

1, Castillo sur. dr 2500 ft. Stewart's Nations 2, tr 819, blk 18, sp. **McMullen**—Barbara's Edrington 1, sec 79, cor below 2882 ft. Schimmel's Hagist 1-A, sur 125, dr 2125 ft. Shumway & Burns' Shiner 2, Grist sur 4, set sur csg, wocs. **Starr**—Circle's Olivares 1, sur 241, dr below 2000 ft. Hall & Schmidt's Margo 1, por 70, dr 830 ft. Harter's Guerra 1, por 69, fsg 400 ft. Sun's Olivarez 1, sur 239, cor below 5090 ft; Speer 1, sur 274, cor 5440 ft. **Webb**—Holland & Mayfair's Bruni 2, Borrego gr, dr 700 ft. Killam's Frost 1, sur 604, lcn. **Zapata**—Thompson's Ramirez 1, por 18, 1700 ft, dr.

SAN ANTONIO DISTRICT

Atascosa—Stanley's Schumann 1, Stephens Ranch, td 1703 ft, woc. **Bastrop**—Brown's Bailey 1, Crutchfield sur, lcn. Franklin's Thaxton & Yarrington 2, Bangs sur, sd 2041 ft. Tarver's McDuff 1, Wilbarger sur, mim. Teas' Grizzard 1, Graham league, td 7175 ft, sd. **Bexar**—Blackburn's Miller 1, sur 324, td 441 ft, will set csg to shut off wtr. Crooks, Blandford 1, Navarro sur, spud. Noake's Oppenheimer 1, td 1005 ft, prep dr ahead. Johnston's Brown 1, td 1375 ft testing. Philtop's Patton 3, td 1113½ ft, testing. Philtop's Patton 4, Rodriguez sur, ru. Ridder's Ridder 1, Barrera sur, lcn. **Blanco**—Johnson's Glasscock 1, sec 50, sd 500 ft. **Caldwell**—Dye's Voight 1, Watkins sur, dr sh 2412 ft. Lincoln's Withers 1, House sur, dr 1380 ft. Nytex' Bridges 1, Floyd sur, fshg 2555 ft. **Frio**—Humble's McLean 1, sur 162, dr 2265 ft; Schley 1, sur 174, td 5309 ft, pb, td 4800 ft, testing on pump. **Guadalupe**—Hamill & Hamill's Zuehl 2, Duran sur, dr 515 ft. Hueners' Bauer 1, Brown sur, dr below 775 ft. King's Rosenbrock 1-A, Duran sur, testing, 1882 ft. **Kendall**—Carpenter's Seidensticker 1, sur 257, dr below 400 ft. Comfort's Gass 1, 1½ mi e Comfort, sd. Dewey's Seidensticker 1, sur 18, dr 300 ft. Graham's Werner 1, sur 781, dr 160 ft. Reed's Marquart 1, Traviesso sur, dr 670 ft. **Kimble**—Plateau's Bolt 1, sur 42, sd 1675 ft; Davis 1, sur 44 sd 910 ft; Hunger 1, sur 43, prep dr plugs, td 1800 ft. **Kinney**—Wardlow's Fee 1, Valdez gr, sd, 1290 ft. **Lee**—Pederson's Brown 1, Hudson sur, sd below 5636 ft. **Maverick**—Humble & Wellington's Indio 1, Rivas gr, fsg 3223 ft. Rio Development's State 5, sur 1, dr below 50 ft. **Medina**—Cromwell's Tondrie 1, Rogers sur, sd 1336 ft. Gannon's Saathoff 1, Duran sur 844, sp and sd. Gaston's Rogers 1, Wilson sur, sd 945 ft. Killian, Cruseturner & Martin's Wiemers 1, sur 51, sd, 1120 ft. Ziegler's Haby 1, sur 1, dr below 83 ft; Saathoff 1, sur 231, fsg 905 ft. **Val Verde**— Rose's Gaebler 2, Beales sur, ru. **Wilson**—Stapper's McDaniel 1, Manchaca sur, fsg below 3200 ft.

TEXAS GULF COAST

Brazoria—Humble's Masterson 1, Anchor area, Geo. Robinson sur, dr shale 1612 ft. Normandie's Ramsey 1, Iowa Colony area, H.T.&B. No. 69, abn 6911 ft. **Chambers**—F. A. Gillispie's Kirby Pet. Co. 1, West Cotton Lake, Chambers County School Land sur, preparing to work over at 6523 ft. **Galveston**—Midwest Royalty Co.'s Lobit 1, sw of League City, Perry & Austin sur, comp 301 barrels daily at 9106 ft. Sun's Humphreys 1, Bolivar prospect, R. Barrow sur, dr shale 3602 ft. **Harris**—McAlester Fuel's Sweeney Estate 1, W. C. R. R. sur, abn 7755 ft. Jack Frazier's Lang 1, Highland area, R. White sur, dr shale 4905 ft; same operator's Griffith 1, Mt. Houston prospect, Adams Smith sur, dk. **Jefferson**—British American Oil Co.'s Gladys City 1, w flank of Spindletop, J. A. Veatch sur, dr shale and lime 6066 ft. Humble's McFaddin B-13, Jefferson Coast salt dome, in Gulf of Mexico, lcn; same operator's Todd 1, Cheek area, W. Carr sur, woc 3200 ft. **Madison**—W. E. Holleman's Cannon Heirs 1, nw of Madisonville, J. P. Phillips sur, sd 1700 ft. **Montgomery**—Deep South's Foster Lbr. Co. 1, ne of New Caney area, P. Bryan sur, dr shale 6926 ft. Housh & Thompson's Clary 1, nw of Conroe, W. S. Allen sur, dr shale 3505 ft. Frazier & Bunte's Chase National Bank 1, sw of Conroe, D. Garrett sur, abn 8515 ft. Mills Bennett's Lewellyn & Foster 1, sw of Conroe, A. Hodge sur, dr shale 8510 ft. **Orange**—Suns' Lutcher Moore 1, North Orange area, B. Johnston sur, straightening hole 7000 ft. **Trinity**—C. D. Davis et al's Gibson 1, n of Trinity, A. Donovan sur, woc 234 ft. Max V. Scott's First National Bank 1, s of Trinity, W. Beasley sur, dr shale 2505 ft. **Wharton**—Humble's Hancock 1, east of Louise, L. L. Miller sur, dr shale 5570 ft.

Minerals Yearbook 1938

The U. S. Department of the Interior, Bureau of Mines, Washington, D. C., has recently announced the publication of the Minerals Yearbook 1938. This book presents a complete economic and statistical summary of the mineral industry of the United States in 1937 and contains a larger amount of precise and detailed data than previous editions. The price of the book is $2, and copies can be secured by writing to the Superintendent of Documents, Washington, D. C.

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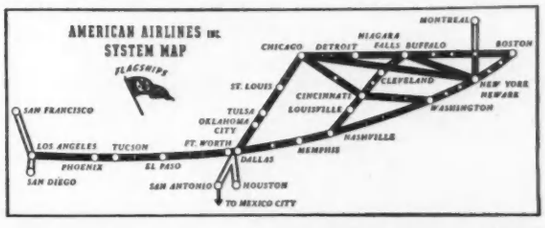

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CRAWLER TREAD
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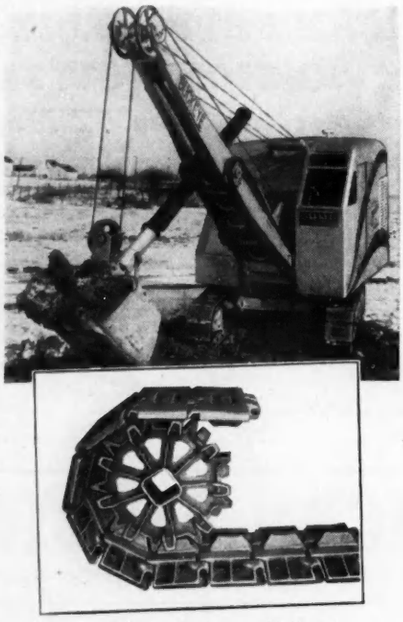
Buckeye Traction Ditcher Company, Findlay, Ohio, has recently introduced a new crawler tread for use on clipper convertible excavators.

One of the main features of this new design is the absolute freedom from clogging, there being no pockets in the tread where loose materials can lodge. The single lug in the center and the wide roller track on each side of the lug give a positively non-clogging surface.

Since the bearing surface on the top of the lug is cast to a radius similar to that of the sprocket rim, there is little wear on the sprocket rim where the load is carried. This bearing will not wear out of pitch and keeps the treads in a true pitch circle.

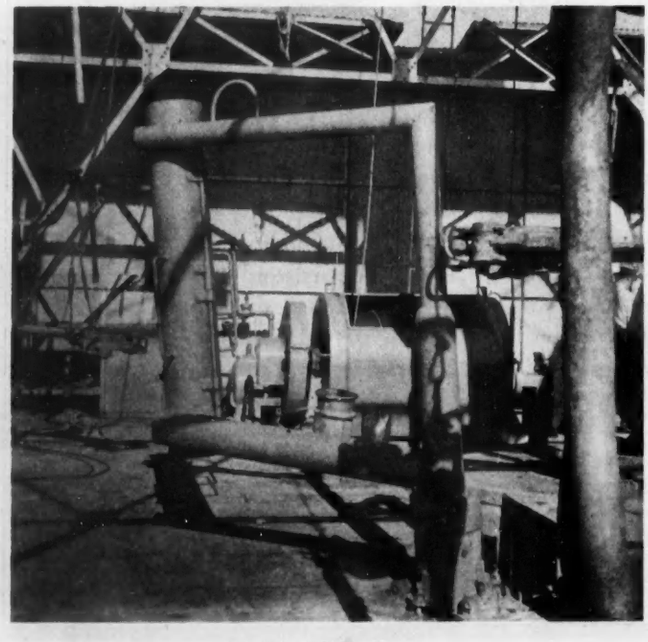
Another advantage of this design is the way the treads fold around the tooth on the sprocket, with no rubbing of sprocket teeth in or out of engagement. This keeps wear on the teeth confined to drive pressure.



New crawler tread on all Buckeye Clipper Excavators

MUD SAVER
Welch Mud Saver Company

Welch Mud Saver Company, Jennings, Louisiana, is presenting a mud saver which has been tested for more than two years in the oil fields in order to make any improvements necessary for good results.



Welch Mud Saver

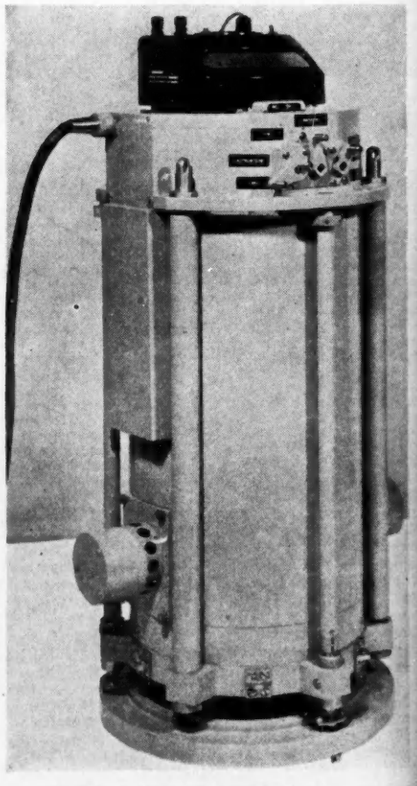
While primarily designed to save mud, the safety factor in its use should not be overlooked, as it can easily be seen that in keeping the derrick floor free of slippery mud many accidents thus caused are prevented. Being pivoted instead of suspended by cables it cannot come loose and swing across a derrick floor. Furthermore caustics and acids in modern day drilling mud is kept off of drilling crews and rig.

The construction of this mud saver is ideally adaptable to piling and drilling barge jobs and other places where there is damage in pollution of streams. It is of considerable aid in closed mud systems where drilling under pressure is desired.

GRAVITYMETER
American Askania Corporation

American Askania Corporation, 826 M. & M. Building, Houston, has recently announced the development of a new portable gravitymeter which will be available in the near future. The new instrument is of the mechanical-electrical type and is recommended to be used in a half-ton delivery truck.

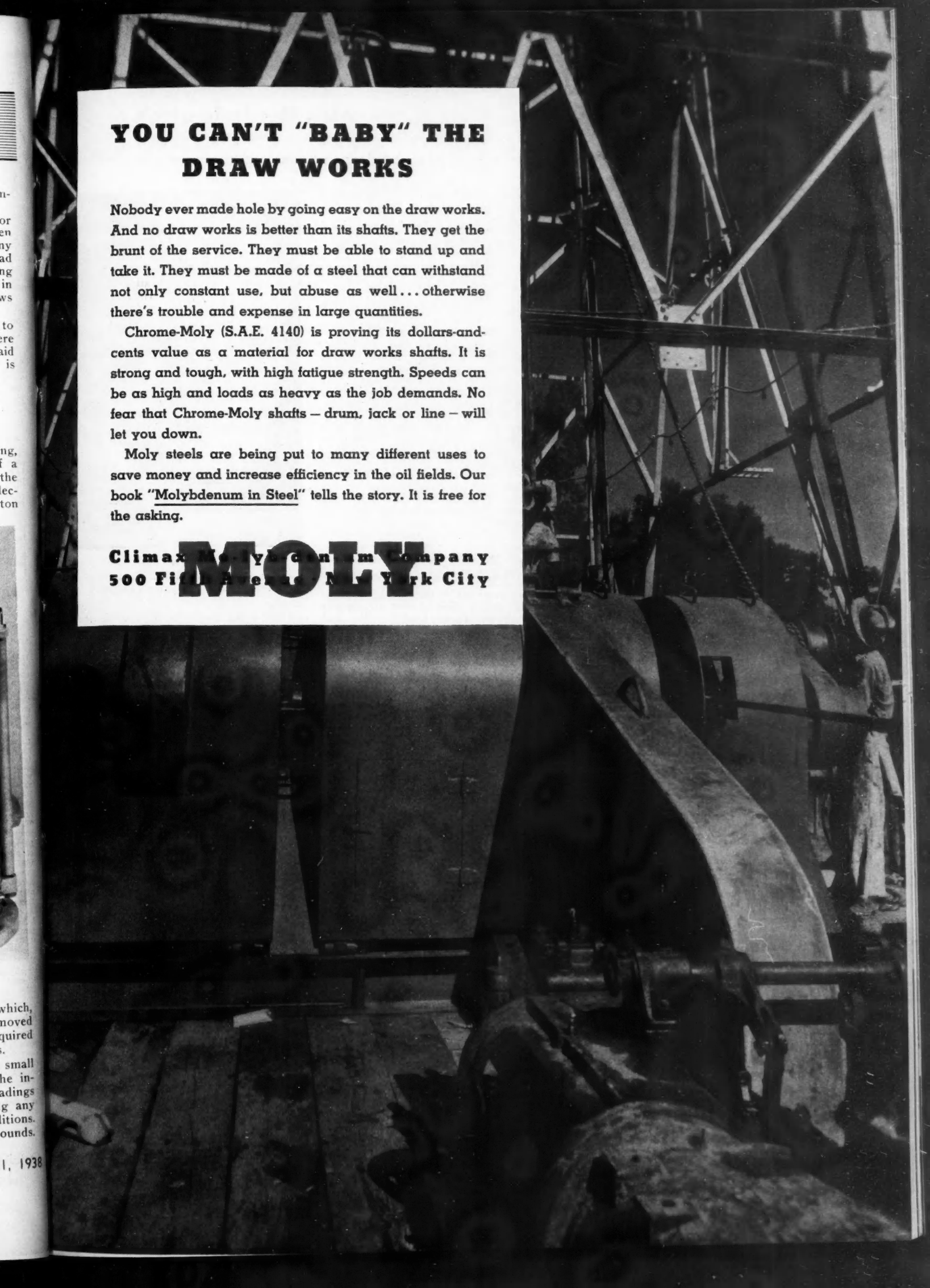
The principle of the design is based on the electrical determination of the lengthening of a vertical spring due to changes of the gravitational field. Due to the fact that the gravitymeter is air-tight, variations of the atmospheric pressure do not influence the readings. The inclination error is small and under favorable conditions amounts to less than 0.1 millidyne, the instrument being inclined by 90 seconds in both horizontal directions.



Askania Static Gravitymeter.

The reading of the gravity variation is made by means of a microammeter (without amplifier) or on a reading drum. The sensitivity can be modified within a comparatively wide range. A double thermostat is provided on the instrument which, however, is to be used only when the apparatus is moved between far-apart observation stations. The time required for one reading including the set-up is 4 to 5 minutes.

The gravitymeter is elastically suspended within a small truck in such a way that the observer can lower the instrument direct to the ground. While taking the readings the observer remains inside the truck, thus avoiding any delay in the survey due to unfavorable weather conditions. The weight of the instrument is approximately 125 pounds.



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This Week with the Industry's EQUIPMENT SUPPLIERS

Johnson, International Harvester Assistant Advertising Manager

Carroll E. Johnson has been appointed assistant advertising manager of International Harvester Company, effective October 7. He succeeds A. C. Seyfarth, whose promotion to advertising manager was recently announced.

Johnson joined the advertising department in May, 1903, after several years of retail selling experience. The company had been formed a few months previously, and Johnson became affiliated with the McCormick division, named after one of the predecessor companies. His first job was in charge of direct-mail and house-organ distribution. On this first job he had the difficult task of coordinating the distribution of predecessor company advertising, including four house organs, the Deering Farm Journal, the Farmers Advance (previously published by the McCormick Harvesting Machine Company), the Illustrated Champion, and the Plano Harvester News.

In 1909 Johnson joined the copy department and wrote general copy until July, 1915, when he was made copy chief. In these many years as copy chief he has played a big role in publicizing numerous important farm equipment developments, especially in power farming. He particularly deserves mention for his work on International motor trucks. In 1906 the first International motor truck, a high-wheeled vehicle called an auto wagon, was placed on the market, and the first and subsequent advertising copy on this outstanding motor truck development was prepared by Johnson.

The year 1915, when Johnson became copy chief, is also a milestone in International motor truck history, for then the first low-wheeled International was brought out to supercede the high-wheeled auto wagon. From 1915 to the present day, paralleling Johnson's career as copy chief, the International line has grown and grown, until the current streamlined "D" line includes units ranging in capacity from the ½-ton light-delivery unit to the largest six-wheeler and consists of 30 models in 99 wheelbases.

C. E. JOHNSON
Assistant Advertising Manager
International Harvester Company

Manufacturers Provide Funds For Students' Competition

Funds totaling $805.00 have been provided the Petroleum Engineering Department of Texas Agricultural and Mechanical College, to be awarded in cash prizes to senior students of the department for the best papers on certain assigned subjects. The money was donated by 23 manufacturers of oil country equipment.

The idea was originated by J. C. Ballagh of Patterson-Ballagh Corporation more than a year ago, and, after a try-out on a limited scale during the 1937-38 session, it was expanded for 1938-1939.

As a part of the regular senior course, students are required to prepare papers dealing with the use of various types of equipment. Papers may include discussion of equipment for a particular job or a general classification of jobs. Papers will be graded by members of the faculty, and a first award of $25.00 will be given to the best paper in each classification. A second prize of $10.00 will be given to the second best paper.

Manufacturers who have contributed to this fund are as follows:

American-LaFrance and Foamite Industries, Axelson Manufacturing Company, Baker Oil Tools, Inc., Baroid Sales Company, Barrett Company, Cameron Iron Works, Cooper-Bessemer Corporation, A. F. Davis of Lincoln Electric Company, S. R. Dresser Manufacturing Company, Halliburton Oil Well Cementing Company, Hughes Tool Company, S. M. Jones Company, Lane-Wells Company, Lufkin Foundry & Machine Company, Mason Neilan Regulator Company, National Supply Company, National Tank Company, Patterson-Ballagh Corporation, Pittsburgh Equitable Meter Company, Reed Roller Bit Company, Sperry-Sun Well Surveying Company, Tretolite Company, and Westcott and Greis, Inc.

Grant Oil Tool Company Appoints Export Sales Representative

Grant Oil Tool Company has appointed Lloyd G. Ensign of 30 Rockefeller Plaza, New York, export sales representative. Ensign has had many years experience in the oil industry and for 17 years was closely identified with oil exploration and operation in Trinidad and Venezuela. Before organizing his own export sales office in New York, he was vice president of Petroleum Machinery Corporation.

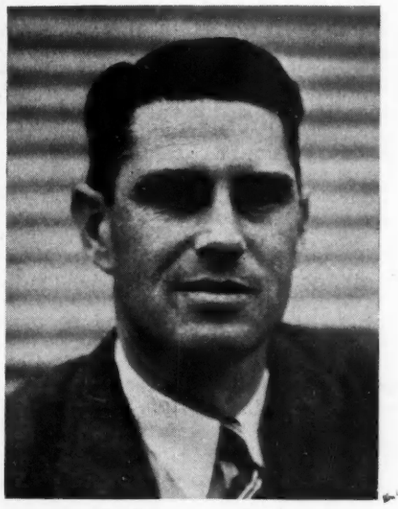
Recently John Grant, president of the company which bears his name, returned from an extensive air tour of South American oil producing areas and reported that the market for dependable oil tools had scarcely been touched by American manu-

facturers. He said: "Grant Oil Tool Company is in the enviable position of having recognized some time ago the potential market in many foreign countries, and because we anticipated the demand for dependable tools the name Grant is already one of the best known names internationally. This applies not only to the South American market, which I recently surveyed personally, but to oil producing areas in the east and middle east. From Egypt to India and from the Euphrates to Southern Arabia operators regard the name Grant in much the same light that a connoisseur regards the name sterling on silverware. It's a mark of dependability to them."

L. G. Robinson on Trip for Security Engineering Company

L. G. "Pat" Robinson, formerly Division Manager San Joaquin Valley for Security Engineering Company, Whittier, California, is taking an extended survey trip throughout Illinois, Oklahoma and Texas. While in Texas he will inspect the site of the company's new division office and warehouse on Navigation Boulevard in Houston, plans for which have already been completed.

H. F. Sutton, a member of Security



L. G. ROBINSON

Engineering Company's sales department for the past five years, will be transferred to Houston as division manager there.

H. E. Thompson has joined the sales department at Whittier and will act as contact man for this division. Thompson received his training and experience through many years association with the oil business prior to his affiliation with the company.

Officers, District Managers and Department Heads attending District Managers Conference.

Pittsburgh Equitable-Merco Nordstrom Managers Meeting

The annual meeting of the district managers of Pittsburgh Equitable Meter Company and Merco Nordstrom Valve Company was held October 5 to 8 at the main offices in Pittsburgh. Colonel W. F. Rockwell, president of the two companies, presided over the sessions. District managers attending were C. R. Zeskey, Kansas City; M. J. Harper, New York; F. G. Swaffield, Columbia, South Carolina; A. J. Kerr, Tulsa; Z. A. Stanfield, Memphis; D. E. Foster, Pittsburgh; C. F. Thomas, Buffalo; H. Boezinger, Los Angeles; A. L. Fritchey, Des Moines; P. C. Kreuch, Chicago; and W. H. Davis, Oakland, California.

Bovaird Supply Company Opens Two New Stores in Illinois

Bovaird Supply Company, Tulsa, has opened new stores at St. Elmo and Salem, Illinois.

V. P. McAnally, who was formerly manager at the company's Russell, Kansas, branch, will be district manager with headquarters in Vandalia. C. E. Reynolds has been appointed manager of the St. Elmo store and Fletcher V. Strong will be field salesman. Reynolds was formerly field salesman out of the company's Chase, Kansas, branch and Strong field salesman at the Kamay, Texas, store.

L. W. Bartheld is store manager at Salem. For the past two years Bartheld has been associated with Pangburn Tool Company, Odessa, Texas, as vice president. Prior to this connection he was store manager for Bovaird Supply Company at Ada, Oklahoma. D. W. Cunningham, formerly with the company at Russell, Kansas, will be field salesman at Salem.

General Electric Company's Sixtieth Birthday

General Electric Company's 60th year was fittingly observed October 17 in Schenectady when the chamber of commerce presented the company with a bronze plaque, commemorating the steps leading to the formation of the company and its location in Schenectady. The plaque was presented by Laurence G. Magner, presi-

V. P. McANALLY

C. E. REYNOLDS

F. V. STRONG

L. W. BARTHELD

D. W. CUNNINGHAM

dent of the chamber of commerce. It was accepted for the company by Gerard Swope, president. A large group of employes, chamber of commerce officers, officials of the company, and others witnessed the brief ceremony. Also during the evening, at a dinner given by the chamber of commerce, three veteran employes of the company with 50 or more years of active service were presented engrossed certificates and diamond-studded pins by the company. The veteran employes were Charles J. Leephart of Schenectady with 55 years; Roderick S. McNeil of Bridgeport with 51 years, and George S. Jameson of Lynn with 50 years.

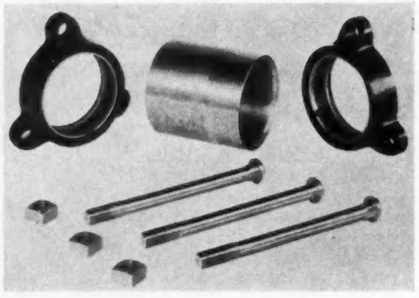
At the afternoon ceremony, Swope in accepting the plaque said in part: "We have had many great leaders of General Electric—Edison, Coffin, Rice, Steinmetz, Thomson—but this company does not depend on its leaders—it depends on the men and women who form this organization, and by coordinated, cooperative effort continue the magnificent structure that these 60 years have reared. But there is nothing final in these 60 years. That is one of the fine things that Mr. Edison did, because he founded this company not on the basis of profit alone, or bigness, plus points that your president has mentioned, but on research, that we should constantly strive to do something better tomorrow than we have done today. That spirit, actuating an organization such as this, will go far to keeping it young and alive. Sixty years young then is the thought that I want to leave with you, and 60 years of research which is only the beginning of further and more truths to be uncovered for greater success not only for the General Electric Company, not only for the city of Schenectady as important as that may be, but for our country as a whole, for the development of our industry, and for the well being of its people."

At the dinner in the evening the principal speaker was Dr. George R. Lunn, public service commissioner of the state of New York and also a former mayor of Schenectady. Dr. Lunn recalled the early days of General Electric Company in Schenectady, and said among other things that not even the leaders of that day realized to what extent the company would grow. He cited as an example, the naming of what is known today as the Buffalo General Electric Company. Dr. Lunn said that when the naming of that company was first considered, its officials talked with Charles A. Coffin, founder of General Electric Company, and asked his advice. His reply was that they should name it the Buffalo General Electric Company, because he said Buffalo was so far from Schenectady that there would be no confusion between the two organizations. Subsequent history has proved the contrary to be true.

Charles E. Wilson, executive vice president of General Electric Company, in presenting the certificates to the three veteran employes, said in part: "In the year when General Electric celebrates 60 years of progress in the electrical industry, these pioneers who have participated in this progress for a half a century or more are on it. Specifically we also honor all, whether they be living or dead. You have not only served General Electric well but you have served society largely. Your service has been to lighten the labors and increase the enjoyment of mankind. The token is not only for your long and faithful service but also a symbol of society's satisfaction of a life of work well done."

Meter Company Distributor for Raybould Couplings

Announcement has been made of the appointment of Pittsburgh Equitable Meter Company, 400 North Lexington Avenue, Pittsburgh, as sole distributor for Raybould couplings and fittings, manufactured by Raybould Coupling Company of Meadville, Pennsylvania. Grover E. Seaberg, manager of the coupling and fitting division, will direct sales for the meter company.



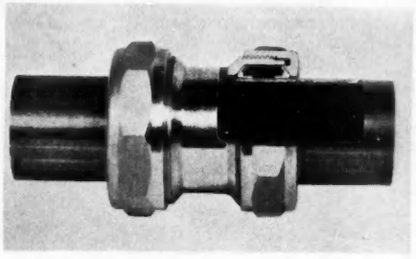
Raybould Coupling—Bolted Type

The Raybould coupling is a patented article, said to furnish an extremely simple and leak-proof method of joining plain-end pipe. It is described as consisting of two resilient compression rings, metal bushed at either end, encased in two flanges or follower rings which bear against a center ring acting as a spacer between the flanges. The compression rings provide the sealing medium while the flanges sustain all the mechanical forces applied in tightening up the coupling. In sizes smaller than 3-inch the flanges consist of two compression nuts and the coupling is fastened by tightening these nuts on a threaded center ring. Larger sizes employ long track head bolts and nuts to draw up the two flanges.

Making a pipe joint with the Raybould coupling is claimed to be very rapid. The flanges on either end of the center ring are loosened but not removed and two sections of plain end pipe are then inserted until they encounter a tapered pipe stop located equidistant from the ends of the coupling. The two flanges are then tightened and the job is done.

In the Raybould coupling design, the compression rings are metal bushed at either end to definitely confine and retain them in their prescribed area. It is said that a confined compression ring assures a continuous, leak-proof and secure joint equal to the life of the pipe. To permit the metal bushing to close tightly around the outer wall of the pipe, a clearance slot has been provided. This slot not only takes up the allowed clearance over maximum pipe diameter, but also compensates for maximum and minimum tolerances in all pipe diameters.

Features claimed for the Raybould coupling are (1) designed for high pressures, the ability of the pipe being the limiting factor; (2) design provides greatly increased coupling grip on the pipe; (3) contents of pipe cannot contact with or deteriorate compression ring; (4) provides



Raybould Coupling—Screwed Type

sustained grip over an indefinite period; (5) joint is not affected by normal expansion, contraction or deflection of pipe; (6) small diameter or out-of-round pipe does not affect coupling joint; (7) does not require any sizing operations on ends of pipes to maintain close tolerances; (8) requires fewer bolts; (9) only three major parts to handle in field assembly (bolts excepted); (10) minimum millivolt drop between pipe and coupling eliminates electrolytic action.

Well Equipment Handling Hamer Tools in Mid-Continent

L. S. Hamer, president of Hamer Oil Tool Company of California, announces the resignation of C. H. Lane of Houston as the company's representative in the Mid-Continent territory, and the appointment of C. K. Stillwagon, president and general manager of Well Equipment Manufacturing Corporation as exclusive distributors in this area.

Lane originally introduced the Hamer line in the Mid-Continent several years ago and organized special companies to handle Hamer products throughout the district. Among these companies is Well Equipment Manufacturing Corporation which has sold and serviced Hamer products for sometime.

Well Equipment Manufacturing Corporation maintains headquarters at 2023 Semmes Street, Houston, where it has recently constructed a modern office and factory.

Carson Machine & Supply Company in Larger Quarters

Carson Machine & Supply Company of Oklahoma City has just completed a very extensive expansion program, the fifth since the founding of the company in 1930. A. H. Carson, president, decided that this latest expansion would be made on a scope sufficiently large not only to handle present business but to take care of future increases for some time to come.

Originally organized to repair and service oil well steam drilling engines and pumps, its operations now include the manufacture, sale and distribution of various types of drilling equipment. In addition, the company is sales and service agents of Waukesha Motor Company.

The Waukesha department includes power units of all types, ranging from 12 to 300 horsepower, a staff of trained experts for servicing these units day and night, and a complete stock of replacement parts, both here and at their several branch stores throughout the state.

Along with its building expansion, the company has also added to its personnel. The new comers include E. E. Finnefrock, superintendent of manufacturing; L. H. Stratton, Waukesha service manager; J. P. Jackson, shop foreman; Vance H. Lee, sales manager, and Freeman R. Johnson, advertising and sales promotion manager.

Squeaks from the Bull Wheel

Grand Canyon

"Do you know that it took millions of years to carve out this great abyss?"

"My goodness, I didn't know this was a government job."

He Does All the Work

"Does yo' wife take in washin'?"

"Ah shud say not. Ah takes it in an' Ah takes it out. All she does is stay home an' wash it."

Of Local Interest

Mark Twain once told a story of his early lecturing days. Arriving in a town where he was to speak in the early afternoon and seeing that the evening lecture was poorly billed, he stopped in at the general store and addressing the proprietor, said:

"Good afternoon, friend, any entertainment here tonight to help a stranger while away his evening?" The storekeeper straightened up, wiped his hands on his apron and said: "I expect there is going to be a lecture—I have been sellin' eggs all day."

Nothing to It

"We don't need any of them newfangled scales in Ireland," said O'Hara. "There's an aisy way to weigh a pig without scales. You get a plank and put it across a stool. Then you get a big stone. Put the pig on one end of the plank and the stone on the other, and shift the plank until they balance. Then you guess the weight of the stone and you have the weight of the pig."

Evolution

"Yes, go on, Tommy. After the horse comes the motor car, and (prompting) after the motor car comes the ———"

"Installments."

New Crop

"What do you think is the trouble with farming?"

"Well," replied Farmer Bentover, "in my day when we talked about what we could raise on 60 acres, we meant corn —not loans."

Frank

Librarian: "And why do you want so many books this time, Johnnie?"

Johnnie: "My little brother's high chair is broken."

Clean Breast

"And now, doctor, that I've told you I am going to marry Anne, there's one thing I want to get off my chest."

"You just tell me about it, my boy."

"A tattooed heart with the name Mabel on it."

Invincible

"Rastus, did your father go to the lodge meeting last night?"

"Naw, sir! We had to postpone it."

"Postpone it? Why?"

"Why? Because de Grand All-Powerful, Invincible, Most Supreme, Unconquerable Potentate done got beat up by his wife."

Penned

The inebriated man came to a tree with rails around to protect it. He wandered round and round and then gave a cry of fear.

"O, help!" he exclaimed. "I'm locked in!"

One More

Papa glared sternly at his young hopeful. "Another bite like that, young man," he said, "and you'll leave the table!"

Sonny looked up. "Another bite like that," he agreed, "and I'll be finished."

All Gone

"Was your wife's slimming diet a success?"

"Rather—she disappeared completely last Friday."

Constitutional Dry

Barber—"Bay rum shampoo, sir?"

Ardent Dry—"Horrors, no! A dry rub, if you please!"

Doggone

A Scotsman was strolling along the quay one day, when his dog stopped beside a basketful of live lobsters. Instantly one of the lobsters snapped its claws on the dog's tail, and the surprised collie dashed off down the street, yelping with pain.

The fishmonger for a moment was speechless with indignation; then, turning to his prospective customer, he bawled: "Mon, mon, whustle to yer dog; whustle to yer dog."

"Hoot, mon," returned the other complacently, "whustle to yer lobster."

No Use

"Lizzie, I happened to see you kissing the baker this morning. From now on I shall take the bread in myself!"

"But he doesn't like brunettes, ma'am."

Not All Providence

"Well, Rastus, that's a fine garden you have."

"Yes, Pahson."

"You must thank the Almighty for that."

"Pahson, did you ebber see dis piece ob ground when de Almighty had it all to Himself?"

Papa's Toys

"I want to buy a toy train for my little boy."

"Men's hobbies on the next floor, please."

Whistle

I bought a wooden whistle, but it
wooden whistle.
So I bought a steel whistle,
But steel it wooden whistle.
So I bought a lead whistle,
Steel they wooden lead me whistle.
So I bought a tin whistle,
And now I tin whistle.

Not Speaking

"Come here!" said the officer who had properly told off a recruit the previous day. "Why do you pass me without saluting?"

"Well, sir," murmured the recruit, "I thought you were still cross with me."

Diplomacy

An old lady was asked what she thought of one of her neighbors and with a knowing look, replied: "Why, I don't like to say anything about my neighbors; but as to Mr. Jones, sometimes I think, and then again I don't know—but after all, I rather guess he will turn out to be a good deal such sort of man as I take him to be."

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